PAIN MANAGEMENT
APRIL 2003

Ackelman, B. H., and U. Lindgren. "Validity and reliability of a modified version of the neck disability index." *Journal of Rehabilitation Medicine.* 34, no. 6(2002): 284-7 UI 12440803.

The Neck Disability Index was tested for validity and reliability. Fifty-nine Swedish patients (28 men, 31 women) were included. Twenty patients were in the acute phase after a neck sprain, 19 had chronic neck pain and 20 had no neck pain but had other musculoskeletal symptoms. On 5 occasions, the patients completed the Neck Disability Index, the Disability Rating Index, the MOS 36-item short-form health survey, 2 visual analogue scales, for pain and overall activity and some complementary questions. Levels of sensitivity, test-retest reliability and validity were acceptable. In order to increase specificity, we modified the Neck Disability Index by clarifying that the items only referred to the pain in the neck in 9 of 10 items. Thirty-eight patients (16 men, 22 women) were included in a study of the modified version. Twenty patients with acute neck sprain and 18 with other musculoskeletal symptoms filled out the modified version of the Neck Disability Index, which provided a more specific measure of disability due to neck pain.

Adams, H. A., et al. "Postoperative pain management in orthopaedic patients: no differences in pain score, but improved stress control by epidural anaesthesia." *European Journal of Anaesthesiology.* 19, no. 9(2002): 658-65 UI 12243289.

BACKGROUND AND OBJECTIVE: To investigate the interactions of postoperative pain and endocrine stress response, three groups of 21 patients each with total knee arthroplasty were compared in a randomized, prospective design. For postoperative pain management, a three-in-one block, an epidural catheter analgesia or an intravenous patient-controlled analgesia was used. METHODS: After standardized balanced anaesthesia, the pain intensity was measured by a visual analogue scale (VAS). For detection of epinephrine, norepinephrine, antidiuretic hormone, adrenocorticotropic hormone and cortisol in the plasma, blood samples were taken at six time points before and up to 180 min after the start of pain therapy. In addition, systolic arterial pressure, heart rate, partial arterial oxygen saturation, nausea, vomiting and satisfaction of the patients were recorded. RESULTS: Within 15 min after the start of pain therapy, VAS in all groups was similarly reduced from >40 mm to a range <10 mm ($P < 0.001$). Initially, all endocrine stress variables exceeded the normal range. Epidural anaesthesia led to a significant decrease of epinephrine and norepinephrine concentrations, while an increase was observed in the group with patient-controlled analgesia, and the decrease in patients with the three-in-one block was less than in patients receiving epidural anaesthesia ($P = 0.001$). Differences in antidiuretic hormone, adrenocorticotropic hormone and cortisol were less pronounced. Systolic arterial pressure decreased significantly in all groups, particularly in patients with epidural anaesthesia. Partial arterial oxygen saturation and the incidence of nausea and vomiting were comparable. All patients were

satisfied with the methods used. CONCLUSIONS: All methods of pain management led to sufficient analgesia, but they were not accompanied by an adequate reduction in endocrine stress response. Thus, postoperative pain is only a secondary stressor and sufficient analgesia with subjective well-being does not prove a stress-free state. With regard to the reduction of sympathoadrenergic stress response, epidural anaesthesia is superior to the three-in-one block and patient-controlled analgesia. Epidural anaesthesia is recommended particularly for high-risk patients with hypertension, coronary heart disease and diabetes mellitus. In these patients, the reduction of a 'hidden' endocrine stress response in addition to prevention of pain is of special interest.

Adler, L., et al. "A comparison of once-daily tramadol with normal release tramadol in the treatment of pain in osteoarthritis." *Journal of Rheumatology.* 29, no. 10(2002): 2196-9 UI 12375333.

OBJECTIVE: To compare the efficacy and tolerability of once daily (OD) tramadol tablets with normal release tramadol capsules (50 mg) taken 3 or 4 times daily in a multicenter, double blind, double dummy parallel study. METHODS: Patients with moderate to severe pain due to osteoarthritis (OA) were recruited from general practice. Following a titration period of a week, patients were assessed over one month for the analgesic efficacy and tolerability of the test medications. RESULTS: Both treatments were shown to be effective. There was no difference between treatments and both produced good pain control as shown by clinically relevant decreases from baseline pain scores, low escape medication use, and sleep disturbance. The efficacy of the OD tramadol over the 24 h dosing interval was confirmed by the low sleep disturbance, absence of "end of dose" effects in morning pain scores, and low escape medication use. Of the 279 patients recruited, 140 withdrew, mostly because of adverse events. The adverse event profiles were typical of opioids and were similar for both treatments. CONCLUSION: Tramadol OD was at least as effective and well tolerated as normal release tramadol in the management of OA pain. However, OD tramadol offers the advantage of a reduced dosing regimen, which is especially valuable in the elderly population.

Agrawal, V., and M. Tharoor. "Peribulbar anaesthesia for penetrating keratoplasty. A case series." *Indian Journal of Ophthalmology.* 50, no. 4(2002): 313-6 UI 12532497.

PURPOSE: To prospectively analyse the efficacy and safety of peribulbar anaesthesia for penetrating keratoplasty through a noncomparative, consecutive series. METHODS: One hundred twenty-four (91.1%) of 136 patients undergoing penetrating keratoplasty (PK) from January 1997 to December 2001, were administered peribulbar anaesthesia. The anaesthetic mixture consisted 5 ml of lignocaine, bupivacaine, and hyaluronidase (to avoid evaluation bias) in the peribulbar space. A repeat injection of 3 ml was used if the primary injection was inadequate. Digital ocular compression was done for 10-15 minutes after the first injection. Each patient was analysed for degree of akinesia, subjective patient comfort, analgesia, subjective surgeon comfort, and types of surgical conditions. RESULTS: The age ranged from 19 to 86 years. Forty-nine of 124 patients (39.5%) received PK only and remaining 75 patients (60.5%) received additional procedures. A single injection was sufficient to achieve adequate akinesia (grade II and III) in 114 (92%) patients and 120 (97%) of patients were satisfied (graded pain as < or = grade II). During surgery, 6 (5%) phakic eyes developed episodes of positive intraocular pressure and 5 eyes (4%) developed chemosis. There were no other local or systemic adverse events. The surgeon level comfort was (grade II or more) 98% (122 of 124). CONCLUSION: One-point, low volume, peribulbar anaesthesia for penetrating keratoplasty is safe and efficacions.

Ahlgren, E. W., et al. "Diagnosis of pain with a graduated spinal block technique." *Jama.* 195, no. 10(1966): 813-6 UI 12608162.

The differential spinal examination has been used at Duke University Medical Center for approximately 15 years in the evaluation of low-back and lower extremity pain. This is a technique of using increasing concentrations of procaine hydrochloride to block nerves of various sizes and degrees of myelinization. With the ever increasing number of compensation and liability cases, there is a corresponding need for this type of diagnostic and prognostic test. It is an attempt to give the physician an objective estimate of the pain. It must be stressed that this is just another test for diagnostic and prognostic evaluation. However, initial results seem to indicate that much weight can be placed on the findings in an attempt to objectively categorize the pain as being either organic or functional and whether it is medicated by sensory or sympathetic pathways.

Ahn, S. H., et al. "Gabapentin effect on neuropathic pain compared among patients with spinal cord injury and different durations of symptoms." *Spine.* 28, no. 4(2003): 341-6; discussion 346-7 UI 12590206.

STUDY DESIGN: This study evaluated the effect of gabapentin on neuropathic pain in patients with spinal cord injury. OBJECTIVE: To compare the effect of gabapentin on neuropathic pain refractory to conventional analgesics in patients with spinal cord injury and different durations of symptoms. SUMMARY OF BACKGROUND DATA: Neuropathic pain in patients with spinal cord injury severely compromises their quality of life. Gabapentin is a new antiepileptic drug that may additionally have a role in the treatment of neuropathic pain. So far, there has been little prospective research investigating the effect of gabapentin on neuropathic pain in patients after spinal cord injury or comparing gabapentin-treated patients with varying durations of symptoms after spinal cord injury. METHODS: The study included 31 patients who had experienced neuropathic pain associated with spinal cord injury or cauda equina syndrome. These subjects were divided into two groups. Group 1 (n = 13) was composed of patients whose duration of pain was less than 6 months, and Group 2 (n = 18) comprised patients whose symptoms of neuropathic pain had lasted more than 6 months. Although these patients had been treated with conventional analgesics such as antidepressants, anticonvulsants, membrane stabilizer, and neuroleptics, they reported that their condition did not improve after a medication trial of at least 2 weeks duration. In this study, conventional analgesics were continued at a therapeutic level, and gabapentin was administrated for an 18-day titration period followed by a 5-week maintenance period at a dosage of 1800 mg/day or the maximum tolerable dosage. The efficacy of gabapentin administration was gauged by a pain score and a sleep interference score using a 100-mm visual analogue scale (VAS) every 2 weeks. The scores of the two groups were compared every 2 weeks over the course of the 8-week study. RESULTS: The mean pain score and the mean sleep interference score for Group 1 decreased more than that of Group 2 during the interval between 2 to 8 weeks ($P < 0.05$). The mean pain score for Group 1 decreased from 7.3 +/- 0.5 initially to 3 +/- 0.6 after 8 weeks of treatment, whereas the corresponding score for Group 2 decreased from 7.6 +/- 0.4 to 5.1 +/- 0.6 (< 0.05). The mean sleep interference score for Group 1 decreased from 5.7 +/- 0.9 initially to 1.8 +/- 0.8 after 8 weeks of treatment, whereas the corresponding score for Group 2 decreased from 5.9 +/- 0.8 to 4.2 +/- 0.7 ($P < 0.05$). As compared with the onset of this study, a decrease in pain score of 2 or more was reported at the completion of this study for 11 patients (100%) in Group 1 and 10 (71%) of 14 patients in Group 2. A decrease of 2 or more in sleep interference scores was reported for 8 (89%) of 9 patients with sleep interference in Group 1 and for 8 (62%) of 13 patients with sleep interference in Group 2. Some adverse effects such as somnolence were noted, but they were mild or moderate in intensity. CONCLUSIONS: Gabapentin may be effective in decreasing neuropathic

pain refractory to conventional analgesics in some patients with spinal cord injury whose duration of symptoms is less than 6 months, although those with duration of symptoms longer than 6 months showed a significant decrease as well. The drug is unlikely to cause serious adverse effects that limit its use in patients with spinal cord injury.

Amici, E., et al. "Usefulness of pharmacologic stress echocardiography for the long-term prognostic assessment of patients with typical versus atypical chest pain." *American Journal of Cardiology.* 91, no. 4(2003): 440-2 UI 12586260.

Anjum, S. N., M. Faisal, and M. S. Butt. "Avascular necrosis with complete resorption of the proximal humerus following undisplaced three-part fracture." *Orthopedics.* 25, no. 11(2002): 1288-9 UI 12452349.

Anonymous. "House calls. Compression fractures in my back have been causing pain for about a month. Is there anything that can help?" *Johns Hopkins Medical Letter, Health After 50.* 14, no. 12(2003): 8 UI 12619613.

Anonymous. "[In acute coronary syndrome. Seize platelets with pliers]." *MMW Fortschritte der Medizin.* 144, no. 45(2002): 61 UI 12534069.

Anonymous. "New treatment for pain caused by bone cancer." *Mayo Clinic Health Letter.* 21, no. 2(2003): 4 UI 12625278.

Arena, J. G. "Chronic pain: psychological approaches for the front-line clinician." *Journal of Clinical Psychology.* 58, no. 11(2002): 1385-96 UI 12412149.

Many of the techniques and skills the average front-line practitioner possesses (such as intake, psychological testing, cognitive behavior therapy, and relaxation therapy) can be readily and effectively applied to a chronic-pain population. More specialized techniques for pain reduction, such as biofeedback training, can be easily learned by the generalist clinician with a minimum of additional training. In this article, four general steps to assess and reduce chronic pain are reviewed. Through careful use of the available research literature, and by consulting with a colleague who has expertise in chronic pain, most psychologists can straightforwardly begin to help individuals suffering from chronic pain. Copyright 2002 Wiley Periodicals, Inc.

Arezzo, J. C. "Possible mechanisms for the effects of botulinum toxin on pain." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S125-32 UI 12569959.

The therapeutic effects of botulinum toxin are principally, if not exclusively, derived from an alteration in the release of acetylcholine (ACh) at pre-synaptic neurons. The rationale for how these effects could be beneficial in conditions characterized by excessive muscle contraction is clear, but the hypotheses regarding botulinum toxin-induced effects on pain are highly speculative. We explore five possible mechanisms by which botulinum toxin could directly or indirectly alter pain, including: 1) changes in the sensitivity and response patterns of group III and IV muscle nociceptors, 2) diminished activity in the gamma-motor neurons and consequent changes in muscle spindle afferents, 3) alterations in cholinergic control of vascular and autonomic functions, including neurogenic inflammation, 4) induced neuroplastic changes in the processing of afferent somatosensory activity at multiple levels of the neuroaxis, and 5) direct non-cholinergic effects on pain afferents. [References: 78]

Argoff, C. E. "A focused review on the use of botulinum toxins for neuropathic pain." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S177-81 UI 12569966.

Understanding the pathophysiology of a pain syndrome is helpful in selecting appropriate treatment strategies. Nociceptive pain is related to damage to tissues due to thermal, chemical, mechanical, or other types of irritants. Neuropathic pain results from injury to the peripheral or central nervous system. Common examples of neuropathic pain include postherpetic neuralgia, diabetic neuropathy, complex regional pain syndrome, and pain associated with spinal cord injuries. Nociceptive pain may have similar clinical characteristics to neuropathic pain. It is also possible for acute nociceptive pain to become neuropathic in nature, as with myofascial pain syndrome. A clear benefit of botulinum toxin therapy for treatment of neuropathic pain disorders is that it often relieves pain symptoms. Although the precise mechanism of pain relief is not completely understood, the injection of botulinum toxin may reduce various substances that sensitize nociceptors. As a result, botulinum toxin types A and B are now being actively studied in nociceptive and neuropathic pain disorders to better define their roles as analgesics. [References: 22]

Armstrong, D. N. "Multiple hemorrhoidal ligation: a prospective, randomized trial evaluating a new technique." *Diseases of the Colon & Rectum.* 46, no. 2(2003): 179-86 UI 12576891.

PURPOSE: A modified anoscope was developed, with lateral apertures at the left lateral, right anterior, and right posterior quadrants, to enable synchronous exposure and ligation of all three internal hemorrhoids. Results were compared with those for conventional multiple ligation. METHODS: Postligation pain, complications, and outcomes were compared between synchronous ligation with the new anoscope (synchronous group) and three-quadrant ligation with a conventional anoscope with similar overall dimensions (conventional group). RESULTS: Twenty-five patients were prospectively randomized to each group. Postligation pain and analgesic requirements were recorded up to 28 days, and postligation complications and outcomes were evaluated for a minimum of 6 months. Narcotic requirements were lower in the synchronous group, but this difference did not achieve statistical significance ($P > 0.05$, Student's t-test). Secondary hemorrhage occurred in 1 patient (4 percent) in the conventional group but resolved spontaneously. The synchronous group experienced significantly less pain during the ligation procedure and for 2 days afterward ($P < 0.01$, Wilcoxon's test). External hemorrhoidal thrombosis developed in 4 percent of the synchronous group and 12 percent of conventionally treated patients, all of whom responded to conservative treatment. Repeat ligation was required less often in the synchronous group (16 percent) than with conventional ligation (28 percent). Surgery (completion hemorrhoidectomy for external thrombosis) was necessary in one patient (4 percent) in each group. Anal stenosis developed in one patient in the synchronous group. CONCLUSION: The new anoscope provides improved exposure of all three internal hemorrhoids and permits optimal placement of the rubber bands; this may account for the decreased postligation pain and lower repeat ligation rates. Synchronous hemorrhoidal ligation is a less painful method of multiple hemorrhoidal ligation and may improve outcomes compared with conventional multiple ligation.

Arokoski, M. H., et al. "Hip Muscle Strength and Muscle Cross Sectional Area in Men with and without Hip Osteoarthritis." *Journal of Rheumatology.* 29, no. 10(2002): 2187-95 UI 12375332.

OBJECTIVE: To study the hip muscle strength and cross sectional area (CSA) in men with hip osteoarthritis (OA) compared to age and sex matched healthy controls. METHODS: Based on the American College of Rheumatology criteria regarding classification of hip OA, 27 men (aged 47-64 yrs) with unilateral or bilateral hip OA and 30 age matched randomly selected healthy male controls were studied. The maximal isometric hip abductor, adductor, flexor, and extensor strength (Nm) at 0

degree of hip flexion in the supine position was determined with a dynamometer. The isokinetic hip flexion and extension strength (peak torque, Nm) was determined using angular velocities of 60 degrees /s and 120 degrees /s. The subjective severity of hip pain was rated by visual analog scale prior to the muscle strength test. CSA of the pelvic and thigh muscles was measured from magnetic resonance images. RESULTS: The reliability of intraclass correlation coefficients for repeated measures of muscle strength varied from 0.70 to 0.94 in controls and from 0.84 to 0.98 in subjects with OA. Hip isometric adductor and abductor strength was 25% and 31% lower ($p < 0.001$) in OA subjects than in controls, respectively. The hip isometric and isokinetic flexion strength was 18-22% lower ($p < 0.01$) in OA subjects than in controls, but extension strength did not differ between groups. In OA subjects, the hip flexion and extension isometric and isokinetic strength values were 13-22% lower ($p < 0.05$) on the more deteriorated side compared to the better side. CSA of the pelvic and thigh muscles did not differ between the groups. However, in OA subjects, the CSA of the pelvic and thigh muscles was 6-13% less ($p < 0.05$ to < 0.001) on the more severely affected hip compared to the better hip. CONCLUSION: Men with hip OA have significantly lower abduction, adduction, and flexion muscle strength than controls. The decrease of muscle size and hip pain may contribute to the decrease of muscle strength in hip OA. Other possible underlying causes of the muscle weakness need to be studied.

Arokoski, M. H., et al. "Hip muscle strength and muscle cross sectional area in men with and without hip osteoarthritis." *Journal of Rheumatology.* 29, no. 10(2002): 2185-95 UI 12375331.

OBJECTIVE: To study the hip muscle strength and cross sectional area (CSA) in men with hip osteoarthritis (OA) compared to age and sex matched healthy controls. METHODS: Based on the American College of Rheumatology criteria regarding classification of hip OA, 27 men (aged 47-64 yrs) with unilateral or bilateral hip OA and 30 age matched randomly selected healthy male controls were studied. The maximal isometric hip abductor, adductor, flexor, and extensor strength (Nm) at 0 degree of hip flexion in the supine position was determined with a dynamometer. The isokinetic hip flexion and extension strength (peak torque, Nm) was determined using angular velocities of 60 degrees /s and 120 degrees /s. The subjective severity of hip pain was rated by visual analog scale prior to the muscle strength test. CSA of the pelvic and thigh muscles was measured from magnetic resonance images. RESULTS: The reliability of intraclass correlation coefficients for repeated measures of muscle strength varied from 0.70 to 0.94 in controls and from 0.84 to 0.98 in subjects with OA. Hip isometric adductor and abductor strength was 25% and 31% lower ($p < 0.001$) in OA subjects than in controls, respectively. The hip isometric and isokinetic flexion strength was 18-22% lower ($p < 0.01$) in OA subjects than in controls, but extension strength did not differ between groups. In OA subjects, the hip flexion and extension isometric and isokinetic strength values were 13-22% lower ($p < 0.05$) on the more deteriorated side compared to the better side. CSA of the pelvic and thigh muscles did not differ between the groups. However, in OA subjects, the CSA of the pelvic and thigh muscles was 6-13% less ($p < 0.05$ to < 0.001) on the more severely affected hip compared to the better hip. CONCLUSION: Men with hip OA have significantly lower abduction, adduction, and flexion muscle strength than controls. The decrease of muscle size and hip pain may contribute to the decrease of muscle strength in hip OA. Other possible underlying causes of the muscle weakness need to be studied.

Asahi, M., et al. "Causative agent of vascular pain among photodegradation products of dacarbazine." *Journal of Pharmacy & Pharmacology.* 54, no. 8(2002): 1117-22 UI 12195827.

The photodegradation products of the anticancer drug, dacarbazine, cause adverse reactions including local venous pain when injected intravenously. In this study, we attempted to identify which of these products is responsible. We synthesized or purchased five photodegradation products of dacarbazine (dimethylamine, 5-diazoimidazole-4-carboxamide (Diazo-IC), 4-carbamoylimidazolium-5-olate, 5-carbamoyl-2-(4-carbamoylimidazol-5-ylazo)imidazolium-5-olate and 2-azahypoxanthine) and examined the pain reaction induced by their intraperitoneal administration in mice using an abdominal stretching or constriction assay. Only Diazo-IC clearly induced pain reaction in mice in a dose-dependent manner, the other products caused no pain reaction. The threshold concentration for pain reaction in mice was estimated to be about 0.1 mg mL-1. While diclofenac sodium significantly reduced acetic-acid-induced pain reaction in mice, it did not influence those induced by Diazo-IC. This result suggests that the mechanism of Diazo-IC-induced pain is different from that of acetic-acid-induced inflammatory pain. Dacarbazine itself produced marked relaxation of rat thoracic aorta strips in a concentration-dependent manner, but there was no difference between the activity of dacarbazine and its photo-exposed solution, so constriction or relaxation of blood vessels is unlikely to be a factor in the pain reaction. In conclusion, Diazo-IC generated by photodegradation of dacarbazine solution causes the side-effect of venous pain. Dacarbazine solution that has turned pink should not be used, because Diazo-IC is an intermediate in the formation of the reddish product, 5-carbamoyl-2-(4-carbamoylimidazol-5-ylazo)imidazolium-5-olate. Drip infusion preparations of dacarbazine should be shielded from light.

Beekwilder, J. P., et al. "Kv1.1 channels of dorsal root ganglion neurons are inhibited by n-butyl-p-aminobenzoate, a promising anesthetic for the treatment of chronic pain." *Journal of Pharmacology & Experimental Therapeutics.* 304, no. 2(2003): 531-8 UI 12538804.

In this study, we investigated the effects of the local anesthetic n-butyl-p-aminobenzoate (BAB) on the delayed rectifier potassium current of cultured dorsal root ganglion (DRG) neurons using the patch-clamp technique. The majority of the K(+) current of small DRG neurons rapidly activates and slowly inactivates at depolarized voltages. BAB inhibited the whole-cell K(+) current of these neurons with an IC(50) value of 228 microM. Dendrotoxin K (DTX(K)), a specific inhibitor of Kv1.1, reduced the DRG K(+) current at +20 mV by 34%, consistent with an important contribution of channels incorporating the Kv1.1 subunit to the delayed rectifier current. To further investigate the mechanism of BAB inhibition, we examined its effect on Kv1.1 channels heterologously expressed in mammalian tsA201 cells. BAB inhibits the Kv1.1 channels with an IC(50) value of 238 microM, similar to what was observed for the native DRG current. BAB accelerates the opening and closing of Kv1.1, but does not alter the midpoint of steady-state activation. BAB seems to inhibit Kv1.1 by stabilizing closed conformations of the channel. Coexpression with the Kv beta 1 subunit induces rapid inactivation and reduces the BAB sensitivity of Kv1.1. Comparison of the heterologously expressed Kv1.1 and native DRG currents indicates that the Kv beta 1 subunit does not modulate the gating of the DTX(K)-sensitive Kv1.1 channels of DRG neurons. Inhibition of the delayed rectifier current of these neurons may contribute to the long-duration anesthesia attained during the epidural administration of BAB.

Belcher, P. R., et al. "Are we negating the benefits of CABG by forgetting secondary prevention?" *Journal of Human Hypertension.* 16, no. 10(2002): 691-7 UI 12420192.

The objective of the study was to examine medically managed secondary prevention at one year after coronary artery bypass grafting (CABG). In all, 214 consecutive patients undergoing isolated elective CABG seen four weeks

preoperatively and one year post-operatively. Preoperative systolic blood pressure averaged 135+/-20 mmHg, which increased to 148+/-25 mmHg (P<0.0001) as did diastolic pressure (81+/-12 to 87+/-13 mmHg; P<0.0001). Anginal symptoms were reported by 45.1% (P<0.0001) although median severity scored lower (4.0 [3.0-5.4] vs 0 [0-2.0]; P<0.0001). Breathlessness decreased from 93% to 64% (P<0.0001) and was scored less severely (4.0 [2.0-5.0] vs 2.0 [0-4.0]; P<0.0001. In all, 88% with postoperative angina reported dyspnoea against 44% of those without (P<0.0001). Calcium antagonist use was more common in patients with angina (27.2% vs 5.1%; P<0.0001), but not nitrates (P=0.8695), diuretics (P=0.4218), digoxin (P=0.2565), beta-blockers (P=0.0820), or ACE inhibitors (P=0.7256). Preoperatively 166 patients (80.2%) took aspirin vs 69.2% afterwards (P=0.0131). Twelve patients (6.5%) received warfarin after operation vs none preoperatively. Two took digoxin (0.97%) preoperatively and 14 (7.7%) postoperatively (P=0.001) for chronic atrial fibrillation. One of these took warfarin. Long-acting nitrate use fell from 63.4% to 15.8% (P <0.0001). Short-acting nitrate use fell similarly (P<0.0001). Preoperatively 37 patients (17.9%) took ACE inhibitors vs 44 postoperatively (24.2%); 39 had not received them before. Preoperatively 48 (23.2%) took diuretics vs 30 (16.5%) postoperatively (P=0.127); 24 had not previously taken diuretics. More patients took HMGCoA inhibitors postoperatively (P=0.0068) and total cholesterol was significantly reduced with a concomitant increase in HDL fraction. Smoking habit was virtually unchanged from 17.8% to 15.1% (P=0.5023). In conclusion: angina was common. Apart from statin prescribing, postoperative secondary prevention measures were poorly applied, less widespread and less effective than preoperatively. The implications are disturbing.

Bennett, W. F. "Arthroscopic repair of anterosuperior (supraspinatus/subscapularis) rotator cuff tears: a prospective cohort with 2- to 4-year follow-up. Classification of biceps subluxation/instability." *Arthroscopy.* 19, no. 1(2003): 21-33 UI 12522399.

PURPOSE: The purpose of this study was to evaluate the outcome of patients who underwent arthroscopic repair of anterosuperior rotator cuff tears. The null hypothesis, that there was no difference between preoperative scores and postoperative scores, was tested statistically. TYPE OF STUDY: A cohort study. METHODS: The preoperative and postoperative status of patients with anterosuperior rotator cuff tears was analyzed using the Constant score, American Shoulder and Elbow Society Index (ASES Index), a visual analog pain scale (VAS), a single question of percent function compared with the opposite unaffected extremity, and a single question reflecting satisfaction, "would you undergo the surgery and the postoperative rehabilitation to achieve the result you have today." There were also 2 groups compared: 1 that had a "tac" used for repair of the subscapularis tendon, and the other that used a "tie" technique for subscapularis repair. All supraspinatus tendon tears were complete and were repaired using a soft-tissue fixation device. RESULTS: There was a statistically significant difference for all outcome measures except for the objective Constant score of the tie group, P =.58. Follow-up was 2 to 4 years. There were no differences based on sex or type of fixation device used for repair of the subscapularis tendon. There were no reruptures, clinically. CONCLUSIONS: The arthroscopic repair of anterosuperior rotator cuff tears provides reliable expectation for improvement in function, decreases in pain, decreases in clinical findings of biceps subluxation and inflammation, improvement in shoulder scores, and the improvement of clinical findings of subscapularis insufficiency.

Berlet, G. C., et al. "A prospective trial of night splinting in the treatment of recalcitrant plantar fasciitis: the Ankle Dorsiflexion Dynasplint." *Orthopedics.* 25, no. 11(2002): 1273-5 UI 12452346.

Twelve patients were treated with the Ankle Dorsiflexion Dynasplint (Dynasplint Systems Inc, Severna, Md) for recalcitrant plantar fasciittis. Using a modified plantar

fasciitis functional assessment scale and a visual analog pain assessment scale for evaluation, 75% of patients reported improvement ofsymptoms at 1-month follow-up. The average percentage of weekly sleeping hours spent in the splint was 95%. There was no tendency to deterioration of results by 6 months postsplinting. The Ankle Dorsiflexion Dynasplint is effective in the treatment of recalcitrant heel pain in a majority of patients. This study supports its use for the treatment of recalcitrant plantar fasciitis.

Bigal, M. E., C. A. Bordini, and J. G. Speciali. "Intravenous dipyrone for the acute treatment of episodic tension-type headache: a randomized, placebo-controlled, double-blind study." *Brazilian Journal of Medical & Biological Research.* 35, no. 10(2002): 1139-45 UI 12424485.

Acute headaches are responsible for a significant percentage of the case load at primary care units and emergency rooms in Brazil. Dipyrone (metamizol) is easily available in these settings, being the most frequently used drug. We conducted a randomized, placebo-controlled, double-blind study to assess the effect of dipyrone in the acute treatment of episodic tension-type headache. Sixty patients were randomized to receive placebo (intravenous injection of 10 ml saline) or 1 g dipyrone in 10 ml saline. We used seven parameters of analgesic evaluation. The patients receiving dipyrone showed a statistically significant improvement ($P<0.05$) of pain compared to placebo up to 30 min after drug administration. The therapeutic gain was 30% in 30 min and 40% in 60 min. The number of patients needed to be treated for at least one to have benefit was 3.3 in 30 min and 2.2 in 60 min. There were statistically significant reductions in the recurrence (dipyrone = 25%, placebo = 50%) and use of rescue medication (dipyrone = 20%, placebo = 47.6%) for the dipyrone group. Intravenous dipyrone is an effective drug for the relief of pain in tension-type headache and its use is justified in the emergency room setting.

Birrell, F., et al. "Predictors of hip joint replacement in new attenders in primary care with hip pain." *British Journal of General Practice.* 53, no. 486(2003): 26-30 UI 12564273.

BACKGROUND: Studies investigating the factors associated with need for total hip replacement should ideally be based on prospective investigation of new attenders in primary care. AIM: To determine the incidence of listing for total hip replacement, and its predictors, among attenders in primary care with a new episode of hip pain. DESIGN OF STUDY: Prospective multicentre cohort study. SETTING: One hundred and ninety-five patients (mean age = 63 years, 68% female) with new episode of hip pain, attending primary care between November 1994 and October 1997. At the first visit, patients were evaluated for indices of pain and disability, range of hip movement, and radiographic changes of osteoarthritis. METHOD: General practitioner participants were recruited from the membership of the Primary Care Rheumatology Society to recruit all consecutive attenders with a new episode of hip pain. Annual follow-up was carried out to determine which patients were being 'put on a waiting list' for total hip replacement. RESULTS: Seven per cent of patients were put on a waiting list for total hip replacement within 12 months and 23% of patients within four years. At presentation, pain duration, pain severity, (including the need to use a stick) and restriction of internal rotation were the major clinical predictors of being put on a waiting list. Radiographic predictors of osteoarthritis performed similarly to the clinical measures. A simple scoring system based on both radiographic severity and two of the clinical measures was derived that identified groups at high likelihood of being put on a waiting list (sensitivity = 76%) with a low false-positive rate (specificity = 95%). CONCLUSION: New primary care attenders with pain are frequently accepted for total hip replacement soon after their first attendance--a decision that can be predicted by simple clinical measures.

Black, P., et al. "A randomized, double-blind, placebo-controlled comparison of the analgesic efficacy, onset of action, and tolerability of ibuprofen arginate and ibuprofen in postoperative dental pain." *Clinical Therapeutics.* 24, no. 7(2002): 1072-89 UI 12182253.

BACKGROUND: Because of its enhanced pharmacokinetic characteristics, ibuprofen arginate might be expected to provide faster pain relief than standard ibuprofen formulations in patients experiencing acute pain. OBJECTIVE: This study assessed the analgesic efficacy, speed of onset, and tolerability of ibuprofen arginate compared with a commercially available form of ibuprofen in patients with postoperative dental pain. METHODS: Patients were randomized to receive ibuprofen arginate 200 or 400 mg, ibuprofen 200 or 400 mg, or placebo in this multicenter, double-blind, double-dummy, parallel-group trial. Patients were observed for 6 hours after administration of a single dose of study medication. A repeated-dose, open-label phase followed. Pain intensity and pain relief were measured using traditional verbal descriptor scales; onset of analgesia was assessed using 2 stopwatches to measure the time to achievement of specific pain relief criteria. RESULTS: A total of 498 patients (219 men, 279 women; mean age, 21.5 years) participated in this study. Baseline pain was moderate in 388 patients (78%) and severe in 110 patients (22%). Meaningful pain relief was reached after a median of 29 and 28 minutes with ibuprofen arginate 200 and 400 mg, respectively, and after 52 and 44 minutes with ibuprofen 200 and 400 mg, respectively (all, $P < 0.05$). The percentages of patients who achieved meaningful pain relief within the first hour after treatment were 77.6% and 83.7% for ibuprofen arginate 200 and 400 mg, respectively, 61.0% and 63.0% for ibuprofen 200 and 400 mg, respectively, and 39.8% for placebo. The differences between ibuprofen arginate and ibuprofen were statistically significant (both doses, $P < 0.05$). Significantly greater numbers of patients achieved meaningful pain relief with ibuprofen arginate 400 mg compared with placebo from 20 minutes through 6 hours and with ibuprofen arginate 200 mg from 30 minutes through 6 hours ($P < 0.05$). Compared with placebo, a greater number of patients achieved meaningful pain relief with ibuprofen 400 mg from 45 minutes through 6 hours; with ibuprofen 200 mg. the corresponding interval was from I through 6 hours. After the first hour, pain reduction was similar for the similar doses of the 2 ibuprofen preparations. Median remedication times with both doses of ibuprofen arginate were similar to those with both doses of ibuprofen, ranging from 4.0 to 5.2 hours. Adverse-event profiles were similar between the 2 active medications. CONCLUSIONS: Ibuprofen arginate was effective in this population of patients experiencing moderate to severe pain after surgical extraction of > or = 1 impacted third molar, with 16 to 24 minutes' faster time to meaningful pain relief than with ibuprofen. The 2 formulations had similar tolerability profiles.

Boker, A., L. Brownell, and N. Donen. "The Amsterdam preoperative anxiety and information scale provides a simple and reliable measure of preoperative anxiety." *Canadian Journal of Anaesthesia.* 49, no. 8(2002): 792-8 UI 12374706.

PURPOSE: To compare three anxiety scales; the anxiety visual analogue scale (VAS), the anxiety component of the Amsterdam preoperative anxiety and information scale (APAIS), and the state portion of the Spielburger state-trait anxiety inventory (STAI), for assessment of preoperative anxiety levels in same day admission patients. METHODS: Patients completed the three anxiety assessment scales both before and after seeing the anesthesiologist preoperatively. The scales used were the STAI, the six-question APAIS, and the VAS. APAIS was further subdivided to assess anxiety about anesthesia (sum A), anxiety about surgery (sum S) and a combined anxiety total (i.e., sum C = sum A + sum S). These scales were compared to one another. Pearson's correlation (pair-wise deletion) was used for validity testing. Cronbach's alpha analysis was used to test internal validity of the various components of the APAIS scale. A correlation co-efficient (r) > or = 0.6 and

P < 0.05 were considered significant. RESULTS: Four hundred and sixty three scale sets were completed by 197 patients. There was significant and positive correlation between VAS and STAI r = 0.64, P < 0.001), VAS and APAIS r = 0.6, P < 0.001), sum C and STAI r = 0.63, P < 0.001) and between VAS and sum C r = 0.61, P < 0.001). Sum C and STAI r value were consistent with repeated administration. Cronbach's alpha-levels for the anxiety components of the APAIS (sum C) and desire for information were 0.84 and 0.77 respectively. CONCLUSION: In addition to VAS, the anxiety component of APAIS (sum C) is a promising new practical tool to assess preoperative patient anxiety levels.

Borer, J. S., et al. "Antianginal and antiischemic effects of ivabradine, an I(f) inhibitor, in stable angina: a randomized, double-blind, multicentered, placebo-controlled trial." *Circulation.* 107, no. 6(2003): 817-23 UI 12591750.

BACKGROUND: Heart rate reduction should benefit patients with chronic stable angina by improving myocardial perfusion and reducing myocardial oxygen demand. This study evaluated the antianginal and antiischemic effects of ivabradine, a new heart rate-lowering agent that acts specifically on the sinoatrial node. METHODS AND RESULTS: In a double-blind, placebo-controlled trial, 360 patients with a > or =3-month history of chronic stable angina were randomly assigned to receive ivabradine (2.5, 5, or 10 mg BID) or placebo for 2 weeks, followed by an open-label 2- or 3-month extension on ivabradine (10 mg BID) and a 1-week randomized withdrawal to ivabradine (10 mg BID) or placebo. Primary efficacy criteria were changes in time to 1-mm ST-segment depression and time to limiting angina during bicycle exercise (exercise tolerance tests), performed at trough of drug activity. In the per-protocol population (n=257), time to 1-mm ST-segment depression increased in the 5 and 10 mg BID groups (P<0.005); time to limiting angina increased in the 10 mg BID group (P<0.05). Deterioration in all exercise tolerance test parameters occurred in patients who received placebo during randomized withdrawal (all P<0.02) but not in those still receiving ivabradine. No rebound phenomena were observed on treatment cessation. CONCLUSIONS: Ivabradine produces dose-dependent improvements in exercise tolerance and time to development of ischemia during exercise. These results suggest that ivabradine, representing a novel class of antianginal drugs, is effective and safe during 3 months of use; longer-term safety requires additional assessment.

Braham, R., B. Dawson, and C. Goodman. "The effect of glucosamine supplementation on people experiencing regular knee pain." *British Journal of Sports Medicine.* 37, no. 1(2003): 45-9; discussion 49 UI 12547742.

OBJECTIVE: The purpose of this study was to examine the effects of oral glucosamine supplementation on the functional ability and degree of pain felt by individuals who had regular knee pain, most likely due to previous articular cartilage damage, and possibly osteoarthritis. METHODS: Subjects were randomly supplemented with either glucosamine (G) (n=24) or placebo (P) (lactose) (n=22) for 12 weeks at a dose of 2,000 mg per day. Over this period, four testing sessions were conducted, with changes in knee pain and function assessed by clinical and functional tests, (joint line palpation, a 3 metre "duck walk" and a repeated, walking stair climb), two questionnaires (the Knee Injury and Osteoarthritis Outcome Score (KOOS) and the Knee Pain Scale (KPS)) and participant subjective evaluations. RESULTS: The clinical and functional test scores improved with time (main effects: p<0.05, p<0.01) but there were no significant differences between the two groups. The questionnaire results also recorded a significant main effect for time (p<0.05), but the glucosamine group was found to have significantly better KOOS quality of life scores at week eight and 12 (p<0.05), and lower KPS scores (p<0.05) at week eight than the placebo group. On self report evaluations of changes across the 12 week supplementation period, 88% (n=21) of the glucosamine group reported some

degree of improvement in their knee pain versus only 17% (n=3) in the placebo group. CONCLUSIONS: These results suggest that glucosamine supplementation can provide some degree of pain relief and improved function in persons who experience regular knee pain, which may be caused by prior cartilage injury and/or osteoarthritis. The trends in the results also suggest that, at a dosage of 2,000 mg per day, the majority of improvements are present after eight weeks.

Bresnihan, B. "Preventing joint damage as the best measure of biologic drug therapy." *Journal of Rheumatology - Supplement.* 65(2002): 39-43 UI 12236622.

Joint damage occurs progressively in patients with rheumatoid arthritis (RA), leading to functional decline and disability. The proinflammatory cytokines interleukin 1 (IL-1) and tumor necrosis factor-alpha (TNF-alpha) are thought to play a key role in promoting cartilage and bone erosion in the rheumatoid joint. In randomized clinical trials, inhibitors of these cytokines significantly slowed the rate of progressive joint damage as assessed by radiographic techniques. The IL-1 receptor antagonist anakinra significantly reduced erosions, joint space narrowing, and total joint damage when a modified Sharp score was used to evaluate serial hand radiographs. The maximum benefit of anakinra on joint space narrowing was achieved within the first 24 weeks and was maintained during continued treatment, whereas the slowing of erosions by anakinra increased with continued treatment beyond 24 weeks. In terms of TNF-alpha inhibition, infliximab significantly reduced joint damage in patients with long-standing RA, when used in combination with methotrexate (MTX), whereas etanercept significantly reduced erosions relative to MTX in patients with early stage disease. Comparisons among the cytokine inhibitors are made problematic by differences in the designs, patient populations, and outcome measures of these trials. Nevertheless, these studies demonstrate that IL-1 or TNF-alpha inhibition effectively suppresses the pathophysiological mechanisms associated with cartilage degradation and bone erosion, resulting in a slowing of further radiographic progression. [References: 16]

Briggs, E. "The nursing management of pain in older people." *Nursing Standard.* 17, no. 18(2003): 47-53; quiz 54-5 UI 12599983.

This article examines the complex skills nurses need to manage pain in older people and the tools that can help quantify a subjective experience. It also examines the pharmacological management of pain and non-pharmacological approaches that can support analgesia and help reduce pain. [References: 39]

Brocq, O., et al. "Hip osteoarthritis: short-term efficacy and safety of viscosupplementation by hylan G-F 20. An open-label study in 22 patients." *Joint, Bone, Spine: Revue du Rhumatisme.* 69, no. 4(2002): 388-91 UI 12184436.

We studied the short-term safety and efficacy of intraarticular hylan G-F 20 (Synvisc) in patients with symptomatic hip osteoarthritis. METHODS: In this open-label prospective study, patients who had hip osteoarthritis with a visual analog pain scale score greaterthan 40/100 and a Lequesne index greater than 6 received one or two intra-articular injections of hylan G-F 20 under fluoroscopic guidance. The patients were evaluated once a month. A response was defined as a 50% decrease in the Lequesne score after 1 month as compared to baseline. RESULTS: Thirty injections were performed in 22 patients with a mean age of 54 years. The response rate was 50% (11/22) after the first injection. Five of the 11 patients who failed to respond to the first injection received a second injection on day 30; two had a response, yielding a cumulative response rate of 13/22. In the six patients followed up for more than 6 months, the improvement was sustained. Short-term safety was satisfactory, with a self-limited exacerbation of pain during the first few days in three patients but no infections or other side effects.

Buchner, M., and D. Sabo. "Ankle fusion attributable to posttraumatic arthrosis: a long-term followup of 48 patients." *Clinical Orthopaedics & Related Research.*, no. 406(2003): 155-64 UI 12579015.

The subjective, clinical, functional, and radiologic long-term results of 48 patients after tibiotalar arthrodesis done for posttraumatic and isolated arthrosis of the ankle are reported. After an average followup of 9.3 years, good and very good results were achieved in 92% for subjective parameters and in 73% for clinical and functional parameters as reflected in the American Orthopaedic Foot and Ankle Society ankle and hindfoot score. Fusion of the ankle in a position greater than 5 degrees plantar flexion was correlated with a worse late clinical outcome monitored by the American Orthopaedic Foot and Ankle Society ankle and hindfoot score. At the followup, average tarsal mobility in the surgically treated foot was reduced to 54% of the contralateral side and that loss of tarsal mobility led to a poorer clinical outcome. However, a high incidence of subsequent arthrosis in the adjacent joints of the foot seems not to be completely avoidable in the long-term. The subtalar joint had moderate and severe arthrosis in 47% of patients. Long-term outcome was worse in these patients compared with patients with mild or without degenerative changes in this joint. The current study justifies the value of ankle fusion as a surgical treatment option in patients with end-stage arthrosis in the ankle, provided precise intraoperative positioning of the arthrodesis and the importance of the subtalar joint, are given due consideration.

Burton, R. I., R. M. Campolattaro, and P. J. Ronchetti. "Volar plate arthroplasty for osteoarthritis of the proximal interphalangeal joint: a preliminary report." *Journal of Hand Surgery - American Volume.* 27, no. 6(2002): 1065-72 UI 12457359.

Osteoarthritis of the hand, including involvement of the proximal interphalangeal joint, is common in the aging population. The purpose of this study is to provide a preliminary retrospective report on 12 volar plate arthroplasties in 9 patients who had volar plate advancement arthroplasty for osteoarthritis of the proximal interphalangeal joint. The average age of the patients was 67.6 years. All of the patients' data were obtained from office notes and hand therapy assessment sheets. The average time from surgery to follow-up evaluation was 36.5 months. All patients had significant pain relief. Range of motion was maintained; there was no significant difference between preoperative and final arc of motion values. Preoperative pinch and grip strengths did not differ significantly from the final values. Postoperative position was similar to preoperative angulation, with recognized lateral stability. Our results suggest that volar plate advancement arthroplasty represents a good primary surgical therapeutic option for the osteoarthritic proximal interphalangeal joint, providing pain relief while preserving motion, strength, and stability.

Carasso, S., and W. Markiewicz. "Medical treatment of patients with stable angina pectoris referred for coronary angiography: failure of treatment or failure to treat." *Clinical Cardiology.* 25, no. 9(2002): 436-41 UI 12269523.

BACKGROUND: Patients referred for elective coronary arteriography because of stable angina pectoris frequently do not receive appropriate medical therapy prior to arteriography. Persistence of symptoms due to lack of appropriate therapy may influence the decision to catheterize and the treatment chosen following catheterization. HYPOTHESIS: The present study evaluates whether patients with stable angina pectoris referred for cardiac catheterization received optimal therapy prior to the procedure. We also evaluated whether medical therapy was optimized as a result of the hospitalization for catheterization. METHODS: We evaluated prospectively the adequacy of medical therapy in 333 consecutive patients undergoing elective coronary arteriography. Of these, 160 had stable angina pectoris as their main problem and constituted the study group. RESULTS: Mean duration of angina was 7.5 +/- 6.3 months. Canadian Cardiovascular Society angina grade 1 was

present in 20, grade 2 in 77, grade 3 or 4 in 63 patients. Arteriography showed a > or = 50% coronary stenosis in 141 of 160 patients. Aspirin was used by 96%, and 86% received at least one drug aimed at relieving anginal symptoms: beta blockers in 69%, calcium blockers in 30%, and long-acting nitrates in 29%. Antianginal drugs and drugs aimed at treating risk factors were usually taken at a low, subtherapeutic dosage. Only 35 of 110 patients taking beta blockers had a resting heart rate of <60/min. Following catheterization, 88 of 141 patients with coronary stenosis of > or = 50% underwent percutanous intervention and 5 had urgent surgery. Optimization of treatment was advised in only 7 of 48 patients for whom medical therapy or elective surgery was recommended. CONCLUSION: Patients with stable angina pectoris are frequently referred for cardiac catheterization without making a serious attempt to control their symptoms by medical therapy. Risk factors are undertreated. With proper pharmacotherapy, many patients might have become asymptomatic and have chosen not to undergo catheterization and subsequent percutaneous interventions.

Carey, T. S., and J. M. Garrett. "The relation of race to outcomes and the use of health care services for acute low back pain." *Spine.* 28, no. 4(2003): 390-4 UI 12590217.

STUDY DESIGN: Four strata of randomly selected health care providers in North Carolina (primary care MDs, Doctors of Chiropractic, orthopedic surgeons, and group model HMO primary care providers) enrolled 1633 consecutive patients with low back pain into a cohort study. OBJECTIVE: To determine whether race had an independent effect on rate of recovery from low back pain, and whether there was any racial disparity in the treatments provided to patients with low back pain. SUMMARY OF BACKGROUND DATA: Little research to date has examined the relation between patient race and recovery from an episode of acute low back pain. METHODS: Consecutive patients were enrolled in the provider's office and contacted by telephone at baseline, at 2, 4, 8, 12, and 24 weeks, and at 22 months. RESULTS: Blacks (n = 238) at baseline had higher pain scores on a 10-point scale (5.92 vs 5.25; P< 0.01) and worse functional disability (12.1 vs 11; P= 0.04), as assessed by the 23-point Roland-Morris scale, yet were considered by their health provider as having less severe pain and less likely to have disc disease than white patients (P < 0.05 for all comparisons). Blacks had worse functional disability at most follow-up interviews. Blacks were shown to be less likely to receive radiographs (49% vs 40%) or advanced imaging studies (10% vs 6%), even after controlling for income, education, baseline severity of low back pain, and insurance status (P < 0.05). Doctors of Chiropractic had different practice approaches than MDs, and there was an interaction with patient race. CONCLUSIONS: The relation of patient race to outcomes from and care for low back pain is complex. Blacks have slightly worse functional status than whites on presentation and at follow-up assessment. Blacks receive less intense diagnostic and treatment approaches from MDs, although the severity of their impairment is at least as great.

Carli, G., et al. "Reactivity to superficial and deep stimuli in patients with chronic musculoskeletal pain." *Pain.* 100, no. 3(2002): 259-69 UI 12467997.

In this study, we evaluated pain sensitivity in patients with fibromyalgia or other types of chronic, diffuse musculoskeletal pain to establish whether fibromyalgia represents the end of a continuum of dysfunction in the nociceptive system. One hundred and forty five patients and 22 healthy subjects (HS) completed an epidemiological questionnaire to provide information about fatigue, stiffness, sleep, the intensity of pain (VAS 0-100) and its extent both at onset and at present. Algometry was performed at all American College of Rheumatology (ACR) tender points and at ten control points. Patients were divided into five main groups: fibromyalgia (FS) patients, secondary-concomitant fibromyalgia (SCFS) patients,

patients with widespread pain (WP) but not reaching the ACR criterion of 11 tender points, patients with diffuse multiregional pain (MP) not reaching the ACR criteria (widespread pain, tender point counts), and patients with multiregional pain associated with at least 11 tender points (MPTE). von Frey monofilaments were used to assess superficial punctate pressure pain thresholds. Heat and cold pain thresholds were determined with a thermal stimulator. Ischemic pain was assessed by the cold pressure test and the submaximal effort tourniquet test. The scores for stiffness and present pain intensity gradually increased concomitantly with the increase in tender point count and pain extent. The pressure pain thresholds for positive tender and positive control points were significantly lower in the SCFS, FS and MPTE groups than in HS, MP and WP groups, the latter three groups displaying similar values. In all groups, there were no differences in pain thresholds between positive tender and positive control points. The heat pain threshold and the pain threshold in the cold pressure test were lower in the FS and SCFS groups than in HS. The cold pressure tolerance was lower in patients with widespread pain than in HS. In the von Frey test, all patient groups except MP had similar values, which were significantly lower than in HS. Finally, all patient groups displayed lower tourniquet tolerance than HS. In each psychophysical test, patients with widespread pain and patients with multiregional pain showed similar thresholds; however, the thresholds in the MP or MPTE groups differed from those in the FS and SCFS groups. In the FS group, pain thresholds and pain tolerance did not differ according to the presence of ongoing pain at the stimulated site and were not correlated to ongoing pain. The results indicate that dysfunction in the nociceptive system is already present in patients with multiregional pain with a low tender point count; it becomes more and more severe as the positive tender point count and pain extent increase and it is maximal in fibromyalgia patients.

Casarett, D., et al. "Obtaining informed consent for cancer pain research: do patients with advanced cancer and patients with chronic pain have different concerns?" *Journal of Pain & Symptom Management.* 24, no. 5(2002): 506-16 UI 12547050.

To explore the factors that patients with malignant and nonmalignant pain consider when deciding whether to enroll in pain research studies, determine whether their views are different, and determine whether willingness to enroll in research is associated with pain severity, semi-structured interviews were conducted with 80 patients (cancer pain: n = 40; chronic nonmalignant pain: n = 40). The risks and potential benefits that were important to patients with cancer were the same as those that were important to patients with chronic pain. Willingness to enroll in research was associated with pain severity (Spearman rho = 0.33; P = 0.041) in patients with chronic pain, but not in patients with cancer pain. Patients with cancer pain do not have different concerns than chronic pain patients do. Although chronic pain patients' willingness to enroll in research was related to pain severity and a desire for better pain management, cancer patients' willingness to enroll was not.

Chang, P. F., L. Arendt-Nielsen, and A. C. Chen. "Differential cerebral responses to aversive auditory arousal versus muscle pain: specific EEG patterns are associated with human pain processing." *Experimental Brain Research.* 147, no. 3(2002): 387-93 UI 12428146.

The specificity of electroencephalogram (EEG) activity in relation to processing of human pain needs further elucidation. This study was designed to determine if nociceptive input and general arousal responses to external stimulation exert different effects on EEG activity. Continuous aversive auditory stimuli (90 dB for 2 min) and painful injection of hypertonic saline (5.8%, 0.2 ml) into the left brachioradialis muscle were administered to 12 male subjects during separate sessions in a counterbalanced design. Intensity, arousal and unpleasantness were assessed during the muscle pain and auditory stimulation using a visual analogue

scale and arousal-affective scales. The EEG data (32 channels) was acquired before, during and after application of painful and aversive auditory stimuli. Aversive auditory stimulation and intramuscular injection of hypertonic saline induced similar degrees of arousal and unpleasantness associated with a similarity of intensity of sensation of pain and auditory sensation. However, muscle pain induced a significant decrease of alpha-1 activity (8-14 Hz) at T6, PC2, PC6, Pz, P4, O2 and POz sites compared to the baseline, but aversive auditory stimulation did not produce any significant changes in alpha-1 activity compared to baseline. The alpha-1 EEG powers at P3, Pz, P4, PC1, PC2 and POz, and alpha-2 at Pz and POz sites were significantly decreased during muscle pain when compared with aversive noise stimulation. These results indicate that specific EEG patterns are associated with human pain processing.

Chang, V. T., S. S. Hwang, and B. Kasimis. "Longitudinal documentation of cancer pain management outcomes: a pilot study at a VA medical center." *Journal of Pain & Symptom Management.* 24, no. 5(2002): 494-505 UI 12547049.

We measured pain outcomes in a cohort of patients with cancer pain in a general hematology/oncology setting at a Veterans Administration Medical center (VA). The outcomes included pain relief, pain severity, changes in pain severity, interference scores, symptom distress, quality of life (QOL), and satisfaction. Seventy-four (74) consecutive patients with worst cancer-related pain equal to or greater than 4/10 were recruited. Cancer pain diagnoses were made and the cancer pain management guidelines of the United States Agency for Health Care Policy and Research were followed. Patients were followed weekly using the Brief Pain Inventory (BPI), medication diary, satisfaction questionnaire, visual analogue quality of life scale (VASQOL) and record of side effects for 3 weeks. The Functional Assessment of Cancer Therapy (FACT-G) and Memorial Symptom Assessment Scale Short Form (MSAS-SF) were used at initial and final interviews. The mean initial worst pain severity was 8.3 (range 4-10) and mean pain relief was 40% (range 0-100). By week 1, the majority of patients achieved pain relief of >/=80%, with a corresponding decrease in worst pain severity and pain interference scores. Pain continued to decrease over three weeks. At week 3, there was a significant improvement in the MSAS-SF psychological symptom distress subscale (P = 0.02). The average number of opioid-related side effects was 5 and remained steady over time. Most patients felt "quite a bit" or "very much" satisfied at all weeks. There was a significant improvement in VASQOL (P < 0.005) and in FACTG SUMQOL scores (P = 0.007). This experience demonstrates that cancer pain management can result in measurable and significant changes in pain relief, pain severity, pain interference scores, psychological symptom distress, and QOL scores.

Charalambous, C., et al. "Weight bearing following intra-articular steroid injection of the knee: survey of current practice and review of the available evidence." *Rheumatology International.* 22, no. 5(2002): 185-7 UI 12215863.

INTRODUCTION: Intra-articular steroid therapy is one of the most common clinical procedures performed by rheumatologists. There is wide variation in the postoperative instructions given to patients following such injections. AIM: The aim of this study was to determine what advice is given with regards to non-weight-bearing following steroid injections of the knee by rheumatologists, orthopaedic surgeons, and general practitioners (GPs). METHOD: A questionnaire examining advice on non-weight-bearing following knee steroid injections was posted to 100 rheumatologists, 100 orthopaedic surgeons, and 50 GPs. RESULTS: A significant proportion of respondents advised patients to avoid weight bearing after injection (42.4%). Most of these advised patients to do so for one (16.3%) or two (25.1%) days. As compared to 57.1% of general practitioners and 2.8% of orthopaedic surgeons, 70.7% of rheumatologists advised patients to avoid weight bearing (P <

0.05). CONCLUSION: A significant proportion of rheumatologists and general practitioners performing steroid injections of the knee advise patients not to weight-bear postinjection. Examination of the available literature fails to reveal strong evidence to support such a practice, which has potentially significant implications with regards to loss of working days, costs of mobility aids, and patient inconvenience.

Cheah, P. Y., et al. "Terazosin therapy for chronic prostatitis/chronic pelvic pain syndrome: a randomized, placebo controlled trial.[comment]." *Journal of Urology.* 169, no. 2(2003): 592-6 UI 12544314.

PURPOSE: We evaluate terazosin therapy for chronic prostatitis/chronic pelvic pain syndrome. MATERIALS AND METHODS: The study included 100, 20 to-50-year-old subjects who met the consensus criteria for chronic prostatitis/chronic pelvic pain syndrome and had not received previous alpha-blockers. Subjects were randomized to receive terazosin with dose escalation from 1 to 5 mg. daily or placebo for 14 weeks. The primary criterion for response was scoring 2 or less ("delighted-to-mostly satisfied") on the National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) quality of life item. The secondary criterion for response was greater than 50% reduction in NIH-CPSI pain score at 14 weeks. Other outcomes included total and NIH-CPSI domain scores, International Prostate Symptom Score, peak urinary flow rate, post-void residual urine and adverse effects. RESULTS: Using the primary criterion 24 of 43 evaluable subjects (56%) responded in the terazosin group compared to 14 of 43 (36%) in the placebo group ($p = 0.03$). Using the secondary criterion 26 of 43 subjects (60%) responded in the terazosin group compared to 16 of 43 (37%) in the placebo group ($p = 0.03$). The terazosin group had greater reductions ($p < 0.05$) in NIH-CPSI total score, individual domain scores and International Prostate Symptom Score than the placebo group. There was no difference in peak urinary flow rate or post-void residual. In the terazosin group 18 patients (42%) had side effects compared to 9 (21%) in the placebo group ($p = 0.04$). CONCLUSIONS: Terazosin proved superior to placebo for patients with chronic prostatitis/chronic pelvic pain syndrome who had not received alpha-blockers previously.

Cheing, G. L., C. W. Hui-Chan, and K. M. Chan. "Does four weeks of TENS and/or isometric exercise produce cumulative reduction of osteoarthritic knee pain?" *Clinical Rehabilitation.* 16, no. 7(2002): 749-60 UI 12428824.

OBJECTIVE: To evaluate the cumulative effect of repeated transcutaneous electrical nerve stimulation (TENS) on chronic osteoarthritic (OA) knee pain over a four-week treatment period, comparing it to that of placebo stimulation and exercise training given alone or in combination with TENS. DESIGN: Sixty-two patients, aged 50-75, were stratified according to age, gender and body mass ratio before being randomly assigned to four groups. INTERVENTIONS: Patients received either (1) 60 minutes of TENS, (2) 60 minutes of placebo stimulation, (3) isometric exercise training, or (4) TENS and exercise (TENS & Ex) five days a week for four weeks. MAIN OUTCOME MEASURES: Visual analogue scale (VAS) was used to measure knee pain intensity before and after each treatment session over a four-week period, and at the four-week follow-up session. RESULTS: Repeated measures ANOVA showed a significant cumulative reduction in the VAS scores across the four treatment sessions (session 1, 10, 20 and the follow-up) in the TENS group (45.9% by session 20, $p < 0.001$) and the placebo group (43.3% by session 20, $p = 0.034$). However, linear regression of the daily recordings of the VAS indicated that the slope in the TENS group (slope = -2.415, $r = 0.943$) was similar to the exercise group (slope = -2.625, $r = 0.935$), which were steeper than the other two groups. Note that the reduction of OA knee pain was maintained in the TENS group and the TENS & Ex group at the four-week follow-up session, but not in the other two groups. CONCLUSIONS: The

four treatment protocols did not show significant between-group difference over the study period. It was interesting to note that isometric exercise training of the quadriceps alone also reduced knee pain towards the end of the treatment period.

Chen, K. W., and J. J. Marbach. "External qigong therapy for chronic orofacial pain." *Journal of Alternative & Complementary Medicine.* 8, no. 5(2002): 532-4 UI 12470431.

Chen, M. L. "Pain and hope in patients with cancer: a role for cognition." *Cancer Nursing.* 26, no. 1(2003): 61-7 UI 12556714.

The importance of hope in determining the adjustment of patients with cancer to their illness has been recognized. Stressful events such as pain and disease metastasis may have an impact on patients' hope levels. This study had three purposes: 1) to examine the effect of disease status on hope levels among patients with cancer who have pain; (2) to compare the level of hope between patients with cancer who have pain and those do not; and (3) to determine which dimensions of pain are associated with hope. Patients (n = 226) with various cancer diagnoses completed the Herth Hope Index. Disease status was measured by one objective indicator (disease stage) and one subjective indicator (perceived treatment effect). The Perceived Meanings of Cancer Pain Inventory was used to measure the cognitive dimension of pain, whereas pain intensity and relief were used to represent the sensory dimension of pain. The patients' disease stage did not affect their level of hope, but their perception of treatment effect was associated with this factor. No difference in level of hope was found between patients with pain and those without pain. For those with pain, the cognitive dimension of pain (meaning ascribed to pain) was significantly correlated with hope, whereas sensory dimensions (pain intensity and relief) showed no such correlation. The study results support the role of cognition in promoting the psychological well-being of patients with cancer.

Chow, E., et al. "International consensus on palliative radiotherapy endpoints for future clinical trials in bone metastases." *Radiotherapy & Oncology.* 64, no. 3(2002): 275-80 UI 12242115.

PURPOSE: To reach a consensus on a set of optimal endpoint measurements for future external beam radiotherapy trials in bone metastases.METHODS: An International Bone Metastases Consensus Working Party invited principal investigators and individuals with a recognized interest in bone metastases to participate in the two surveys and a panel meeting on their preference of choice of optimal endpoints.RESULTS: Consensus has been reached on the following: (a) eligibility criteria for future trials; (b) pain and analgesic assessments; (c) radiation techniques; (d) follow-up and timing of assessments; (e) parameters at follow-up; (f) endpoints; (g) re-irradiation; and (h) statistical analysis.CONCLUSIONS: Based on the available literature and the clinical experience of the working party members, an acceptable set of endpoints has been agreed upon for future clinical trials to promote consistency in reporting. It is intended that the consensus will be re-examined every 5 years. Areas of further research were identified.

Chrubasik, S., et al. "A randomized double-blind pilot study comparing Doloteffin and Vioxx in the treatment of low back pain." *Rheumatology.* 42, no. 1(2003): 141-8 UI 12509627.

OBJECTIVE: This randomized, double-dummy, double-blind pilot study of acutely exacerbated low back pain was aimed to inform a definitive comparison between Doloteffin, a proprietary extract of Harpagophytum, and rofecoxib, a selective inhibitor of cyclo-oxygenase-2 (COX-2). METHODS: Forty-four patients (phyto-anti-inflammatory drug-PAID-group) received a daily dose of Doloteffin containing, inter alia, 60 mg of harpagoside for 6 weeks and 44 (non-steroidal anti-inflammatory

drug-NSAID-group) received 12.5 mg/day of rofecoxib. All were allowed rescue medication of up to 400 mg/day of tramadol. Several outcome measures were examined at various intervals to obtain estimates of effect size and variability that might be used to decide the most suitable principal outcome measure and corresponding numbers required for a definitive study. RESULTS: Forty-three PAID and 36 NSAID patients completed the study. Ten PAID and 5 NSAID patients reported no pain without rescue medication for at least 5 days of the 6th week of treatment. Eighteen PAID and 12 NSAID patients had more than a 50% reduction in the week's average of their pain scores between the 1st and 6th weeks. The mean percentage decrease from baseline in the pain component of the Arhus Index was 23 (S.D. 52) in PAID and 26 (S.D. 43) in NSAID. The corresponding measures for the overall Arhus Index were 11 (31) and 16 (24) and, for the Health Assessment Questionnaire, 7 (8) and 6 (7). Tramadol was used by 21 PAID patients and 13 NSAID patients. Fourteen patients in each group experienced 39 adverse effects, of which 28 (13 in PAID) were judged to some degree attributable to the study medications. CONCLUSION: Though no significant intergroup differences were demonstrable, large numbers will be needed to show equivalence.

Clough, T. M., et al. "The use of a local anesthetic foot block in patients undergoing outpatient bony forefoot surgery: a prospective randomized controlled trial." *Journal of Foot & Ankle Surgery.* 42, no. 1(2003): 24-9 UI 12567364.

Foot blocks are known to prolong postoperative pain relief. Consequently, their use has been extended to patients having outpatient surgery, despite little evidence to show improved patient satisfaction. Indeed, patients having outpatient surgery actually may be less satisfied because they will first experience pain at home on the first postoperative night, which may be more severe than anticipated. In this prospective, randomized, blinded study, 42 patients having unilateral outpatient bony forefoot surgery were assigned randomly to either having the surgery under general anesthesia alone or under general anesthesia with supplementary foot block (0.5% bupivicaine). All patients were assessed at home by telephone interview on the first and second postoperative day. There was a significantly longer time to first perceived pain in the foot block group compared with the control group, but no difference in the number of postoperative analgesic tablets consumed, no difference in pain score on the first night, first postoperative or second postoperative day, or any difference in the overall patient satisfaction scores at 2 days. The authors conclude that a local foot block, although prolonging the time to first perceived pain, does not improve patient satisfaction and is not detrimental when used as analgesia in the outpatient setting.

Crombez, G., et al. "Exposure to physical movements in low back pain patients: restricted effects of generalization." *Health Psychology.* 21, no. 6(2002): 573-8 UI 12433009.

Whether the effects of exposure to 1 movement generalize to another dissimilar movement was investigated in 37 patients with low back pain (15 men, 22 women). Two movements were executed twice: bending forward while standing and lifting 1 leg while lying down. During each trial, baseline pain, expected pain, and experienced pain were recorded. Similar ratings for perceived harm were obtained. Analyses revealed an initial over prediction of pain, but after exposure the overprediction was readily corrected. This exposure effect did not generalize toward another dissimilar movement. These results were only characteristic for patients with catastrophic thinking about pain. Low pain catastrophizers did not overpredict pain. There were no effects of exposure on perceived harm. Exposure may profitably be conceived of as the learning of exceptions to a general rule.

Dai, M. S., et al. "Abdominal wall rhabdomyolysis mimicking peritonitis: a diagnostic pitfall of acute abdomen." *Southern Medical Journal.* 96, no. 1(2003): 105-6 UI 12602736.

Danhauer, S. C., et al. "Impact of criteria-based diagnosis of burning mouth syndrome on treatment outcome." *Journal of Orofacial Pain.* 16, no. 4(2002): 305-11 UI 12455431.

AIMS: Burning mouth syndrome (BMS) primarily affects postmenopausal women and is often difficult to treat successfully. Treatment outcomes have been problematic because of failure to distinguish between patients with BMS and patients presenting with oral burning (OB) resulting from other clinical abnormalities. The purpose of this study was to determine characteristics that might uniquely identify BMS patients from patients with OB and to determine whether proper classification influences treatment outcome. METHODS: The clinical sample consisted of 69 patients (83% female) with an average age of 62 years, pain duration of 2.45 years, and visual analog scale pain rating of 49 mm (rated from 0 to 100 mm). All patients underwent a clinical exam and completed the Multidimensional Pain Inventory and Symptom Checklist 90-Revised. RESULTS: There were no differences between the BMS and OB groups with respect to age, pain duration, pain intensity, life interference, and levels of psychologic distress. Patients with OB demonstrated more clinical abnormalities than BMS patients. Hyposalivation and greater use of prescription medications, most notably hormone replacement therapy, were more common in the OB group compared with the BMS group. When treatment was provided that corrected an identifiable abnormality, significantly more OB than BMS patients reported greater than 50% relief from baseline pain rating. CONCLUSION: These data indicate that while BMS and OB groups may initially present with similar clinical and psychosocial features, they are distinguishable with careful diagnosis that often enables successful management of symptoms for each group.

Davies, A. P. "Rating systems for total knee replacement." *Knee.* 9, no. 4(2002): 261-6 UI 12424032.

The objective assessment of outcome of surgical procedures is assuming increasing significance as the culture of audit and revalidation advances. There is a clear need for surgeons in all fields, but especially in Orthopaedics, to be familiar with the available scoring systems and their relative strengths and weaknesses. It is clear from a recent survey of BASK members' practice that there is little consensus about which system to use (addendum). This review presents a summary of the scoring systems available for the assessment of patients undergoing total knee replacement. These scores are described in detail and their relative merits discussed. None of the systems reviewed is perfect but those developed most recently do appear to offer advantages over older systems. Overall, the Western Ontario and McMaster University Osteoarthritis Index, Short Form 36 and Oxford Knee Score have undergone the most thorough assessment of reliability and validity and are therefore appropriate for the assessment of outcome after total knee replacement. [References: 20]

DeAngelis, N. A., and B. D. Busconi. "Assessment and differential diagnosis of the painful hip." *Clinical Orthopaedics & Related Research.*, no. 406(2003): 11-8 UI 12578995.

Hip pain is a common problem seen by orthopaedic surgeons. The current authors provide an approach to the patient with hip pain, including important information to be gained from the history and physical examination and relevant radiographic studies and laboratory tests. A differential diagnosis for patients presenting with the complaint of hip pain and indications for hip arthroscopy are provided. [References: 21]

Deaton, C., and W. S. Weintraub. "Outcome measurement: evaluating evidence for managing patients with acute coronary syndromes." *Journal of Cardiovascular Nursing.* 16, no. 4(2002): 71-4 UI 12597264.

Evidence-based practice has been proposed as a means to improve the quality of care and decrease unwarranted variability in practice, but evaluating clinical trial data as evidence for practice is made more difficult because practice changes rapidly. This article reviews current clinical trial data on the management of patients with acute coronary syndromes, but the same principles can be used when evaluating alternative medicines. Current evidence supports risk stratification, early treatment with glycoprotein IIb/IIIa inhibitors, and an early invasive strategy in patients who are at intermediate to high risk. In addition, cholesterol-lowering statins should be initiated early in the patient's hospitalization. [References: 8]

Difazio, M., and B. Jabbari. "A focused review of the use of botulinum toxins for low back pain." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S155-62 UI 12569963.

Chronic low back pain is the second most common illness reported by patients in the United States and accounts for substantial morbidity and health-care resource utilization. Many back and spine stressors can contribute to tissue injury, resulting in acute or chronic pain. In response to injury, biochemical processes that cause inflammation and nerve sensitization increase pain levels and contribute to a cycle of reactivity that further heightens patients' sensitivity to pain stimuli. Treatment of back pain depends on its severity, duration, and underlying cause. Traditional therapeutic options include exercise, oral anti-inflammatory or analgesic medication, antidepressants, physical therapy and, in severe cases, surgery. Unfortunately, dissatisfaction with treatment of back pain is common. Oral medications may not completely alleviate symptoms, and opioid analgesics must be used with caution because of their addictive properties. Surgery does not always produce relief and, in some cases, may even exacerbate the problem. Botulinum toxin, which has already been shown to alleviate pain associated with cervical dystonia and other conditions characterized by muscle spasticity, is now being studied for the treatment of back pain. Preliminary evaluations have shown that this treatment is safe and has the advantage of providing local relief directly to the site of injury or pain, without causing systemic side effects. Initial data from small trials also suggest that botulinum toxin is effective, alleviating back pain in selected patients. On the basis of these promising results, additional study in larger trials is warranted. [References: 46]

Drosos, G. I., et al. "Intra-articular morphine and postoperative analgesia after knee arthroscopy." *Knee.* 9, no. 4(2002): 335-40 UI 12424044.

The aim of this study was to evaluate the postoperative analgesic effect of intra-articular administration of a low- and a high-dose morphine solution after knee arthroscopy. Thirty patients who underwent diagnostic arthroscopy or arthroscopic meniscectomy were allocated in three groups. At the end of the arthroscopic procedure patients in Group A received intra-articularly 20 ml normal saline (N/S), Group B received 5 mg morphine in 20 ml N/S and Group C received 15 mg morphine in 20 ml N/S. The postoperative pain was assessed using a visual analogue scale for 24 h, while all the patients stayed at hospital. Side effects from the central action of opioids were not detected. Although the pain scores in the group of low-dose morphine were lower than in the control group, we failed to detect any significant differences in pain scores among the three groups. There was evidence that a high-dose can cause hyperalgesia.

Dukat, M., et al. "(-)6-n-Propylnicotine antagonizes the antinociceptive effects of (-)nicotine." *Bioorganic & Medicinal Chemistry Letters.* 12, no. 20(2002): 3005-7 UI 12270194.

Several 6-alkyl analogues of nicotine were examined in radioligand binding and in vivo functional assays. Although (-)6-ethylnicotine (3) binds with high affinity at nACh receptors (Ki=5.6 nM) and produces nicotine-like actions, its n-propyl homologue (-)4 (Ki=22 nM) failed to produce such effects. In fact, (-)4 antagonized the antinociceptive effects of (-)nicotine in the tail-flick assay in mice, but not the spontaneous activity or discriminative stimulus effects of (-)nicotine. Compound (-)4 appears to selectively antagonize only one of the three effects examined and is an interesting cholinergic agent for subsequent investigation.

Duker, P. C., et al. "Effects of single and repeated shock on perceived pain and startle response in healthy volunteers." *Research in Developmental Disabilities.* 23, no. 4(2002): 285-92 UI 12365852.

Contingent shock (CS) has been used in a number of studies to suppress health-threatening self-injurious behavior of individuals with mental retardation and autism. As sustained suppression is an issue of concern, research into procedural variables of CS is needed. In this study, clinical evidence was used to infer a variable that might be of relevance for the application of clinical contingent shock, that is, to assess the effect of single versus repeated shock at a specific location on the body. With pain intensity and startle response as dependent variables, shocks were administered to 48 healthy volunteers. Electric shocks were identical to those that used in clinical practice. The second shock in succession to the same location of the body produced higher pain intensity ratings than the first shock and that the third shock in succession to the same location of the body produced higher pain intensity ratings than the second shock in succession. Startle responses, however, failed to be affected in this direction. The latter result is consistent with a previous study. Our data suggest that repeated shock to the same location is likely to be more effective to establish suppression than repeated shock to different locations.

Edwards, J. E., et al. "Single dose dipyrone for acute renal colic pain." *Cochrane Database of Systematic Reviews.*, no. 4(2002): CD003867 UI 12519613.

BACKGROUND: Renal colic pain is extremely painful and requires immediate treatment with strong analgesics. Dipyrone is the most popular non-opioid first line analgesic in many countries but in others it has been banned (e.g. USA, UK) because of its association with blood dyscrasias such as agranulocytosis. Since dipyrone is used in many countries (e.g. Brazil, Spain) there is a need to determine the benefits and harms of its use to treat renal colic pain. OBJECTIVES: To assess quantitatively the analgesic efficacy and adverse effects of single-dose dipyrone in adults with moderate to severe renal colic pain. SEARCH STRATEGY: Published reports were identified from electronic databases (MEDLINE, EMBASE, the Cochrane Library, LILACS) and additional studies were identified from the reference lists of retrieved reports. Date of the most recent search: January 2000. SELECTION CRITERIA: Inclusion criteria were: full journal publication; RCT with a double-blind design; adult patients with baseline renal colic pain of moderate or severe intensity; treatment arms which included dipyrone (oral, intramuscular or intravenous administration) and a control; single dose data. DATA COLLECTION AND ANALYSIS: Summed pain intensity and pain relief data were extracted and converted into dichotomous information to yield the number of patients with at least 50% pain relief over 15-30 minutes, 1-2 hours and six hours. The proportion of patients with at least 50% pain relief was calculated. Single dose adverse effect data were collected. MAIN RESULTS: Eleven studies with 1053 patients (550 on dipyrone) met the inclusion criteria. Unfortunately, few data were available for analysis; most analyses were based on the results of single, small trials and statistical pooling of the results was

inappropriate. Efficacy estimates were calculated as the weighted mean percent of patients achieving at least 50% pain relief with the range of values from trials contributing to the analysis. However, these estimates were not robust. Commonly reported adverse effects with intravenous dipyrone were dry mouth and somnolence, and one study reported pain at the injection site. Insufficient information was available for safety analyses to be conducted. REVIEWER'S CONCLUSIONS: Limited available data indicated that single dose dipyrone was of similar efficacy to other analgesics used in renal colic pain, although intramuscular dipyrone was less effective than diclofenac 75 mg. Combining dipyrone with antispasmolytic agents did not appear to improve its efficacy. Intravenous dipyrone was more effective than intramuscular dipyrone. Dry mouth and somnolence were commonly reported with intravenous dipyrone. None of the studies reported agranulocytosis. [References: 46]

Eisenberg, E., and C. Brecker. "Lumbar spinal cord stimulation for cervical-originated central pain: a case report." *Pain.* 100, no. 3(2002): 299-301 UI 12468001.

This case presents a patient with neuropathic pain in a lower extremity, which appeared subsequent to the removal of a C1 meningioma and which was successfully treated by lower thoracic spinal cord stimulation.

Ekberg, E., and M. Nilner. "A 6- and 12-month follow-up of appliance therapy in TMD patients: a follow-up of a controlled trial." *International Journal of Prosthodontics.* 15, no. 6(2002): 564-70 UI 12475163.

PURPOSE: This study compared the long-term effects of treatment with a stabilization appliance and treatment with a control appliance in patients with temporomandibular disorders (TMD). MATERIALS AND METHODS: In a controlled trial, 60 TMD patients with temporomandibular joint (TMJ) pain were evaluated after 10 weeks of treatment with either a stabilization appliance or a control appliance. At the 10-week follow-up, the 60 patients were assigned to one of three groups according to their demand for treatment. Group T, the treatment group, comprised 30 patients treated with a stabilization appliance; group C, the control group, comprised nine patients treated with a control appliance; and group M, the mixed treatment group, comprised 21 patients treated with first a control appliance and then a stabilization appliance. Signs and symptoms were evaluated in all three groups at 6- and 12-month follow-ups. RESULTS: At the 6- and 12-month follow-ups, a significant reduction in TMJ pain as measured on a visual analogue scale was found in all three groups, and a significant decrease in signs and symptoms was found in groups T and M. CONCLUSION: After 6 and 12 months of use, the stabilization appliance was found to still be effective in the alleviation of signs and symptoms in patients with TMD. Many patients in group C changed to a stabilization appliance at the 1 0-week follow-up, which significantly reduced the number of patients in this group. Most patients reported positive change in overall subjective symptoms in this trial. The stabilization appliance can therefore be recommended for patients with TMD.

Endres, S. M. "More on IDET." *Wmj.* 101, no. 8(2002): 4-5 UI 12557605.

Ernst, M. E., S. S. Iyer, and W. R. Doucette. "Drug-related problems and quality of life in arthritis and low back pain sufferers." *Value in Health.* 6, no. 1(2003): 51-8 UI 12535238.

OBJECTIVE: The objective of this study was to determine the relationship between drug-related problems (DRPs) and health-related quality-of-life (HRQoL) in ambulatory, community-dwelling patients with musculoskeletal disorders. METHODS: A 12-month, prospective, observational study was conducted in 12 independent community pharmacies in eastern Iowa. Ambulatory patients with self-reported diagnoses of osteoarthritis, rheumatoid arthritis, or low back pain were invited to

participate. During quarterly visits to the pharmacy, patients used touch-screen computers to fill out the Short Form-36 (SF-36) general health survey. Using the results of these point-of-service health status assessments, community pharmacists interviewed patients to assess for DRPs. To examine the influences of different DRP characteristics on HRQoL and controlling for potential confounders, both univariate and multivariate analyses were performed using the change in physical component summary (PCS) score and mental component summary (MCS) score of the SF-36 from baseline to 12 months as the dependent variables. In each regression, the independent variables were those significant variables from the univariate analyses, as well as the types of DRPs and their outcomes. RESULTS: A total of 461 patients were enrolled in the study. Through 12 months, 926 cumulative DRPs were identified. Overall regression models were significant for the PCS and MCS scores, respectively. Two types of DRPs showed significant negative associations with change in PCS: wrong drug and needs additional drug therapy. One type of DRP showed significant negative association with change in MCS: needs additional drug therapy. Resolution or improvement in DRPs showed a significant positive correlation with change in MCS but not PCS. CONCLUSIONS: Two DRPs, needs additional drug therapy and wrong drug, are associated with reduced self-reported physical health in arthritis and low back pain, while the DRP needs additional drug therapy is also associated with reduced self-reported mental health. Resolution of DRPs is associated with improvement in mental health in this cohort.

Evans, A. J., et al. "Vertebral compression fractures: pain reduction and improvement in functional mobility after percutaneous polymethylmethacrylate vertebroplasty retrospective report of 245 cases." *Radiology.* 226, no. 2(2003): 366-72 UI 12563127.

PURPOSE: To describe the immediate outcome of a large cohort of patients who underwent percutaneous polymethylmethacrylate (PMMA) vertebroplasty for treatment of one or more vertebral fractures. MATERIALS AND METHODS: This retrospective cohort study included seven university-based and private hospitals in the United States. Of 488 consecutive patients (mean age, 76 years) who underwent percutaneous PMMA vertebroplasty between 1996 and 1999, 245 were successfully interviewed retrospectively after vertebroplasty (median time, 7 months). Through telephone interview, patients completed our self-developed questionnaire designed to measure pain (10-point scale), ambulation (five-point scale), and ability to perform activities of daily living (ADL) (five-point scale) before and after vertebroplasty. Differences in reported pain, ambulation, and ability to perform ADL before and after vertebroplasty were evaluated with paired t tests. Differences in proportions were compared with the McNemar test. Subgroup analyses were performed to assess the consistency of differences in pre- and postprocedural pain and functional status by patient age, number of fractures, time from fracture to vertebroplasty, and time from vertebroplasty to questionnaire completion. RESULTS: On a 10-point scale, mean pain decreased from 8.9 before vertebroplasty to 3.4 afterward ($P < .001$). Seventy-two percent of patients had substantially impaired ambulation before vertebroplasty compared with 28% afterward ($P < .001$). Ability to perform ADL was also significantly improved following vertebroplasty ($P < .001$). Twelve patients (4.9%) experienced symptomatic complications (none major or life threatening). CONCLUSION: Treatment of vertebral fractures with percutaneous PMMA vertebroplasty appears to be safe and results in substantial immediate pain reduction and improved functional status. A randomized controlled trial appears warranted to assess the efficacy and safety of vertebroplasty.

Evers, A. W., et al. "Tailored cognitive-behavioral therapy in early rheumatoid arthritis for patients at risk: a randomized controlled trial." *Pain.* 100, no. 1-2(2002): 141-53 UI 12435467.

Recent developments in chronic pain research suggest that effectiveness of cognitive-behavioral therapy (CBT) may be optimized when applying early, customized treatments to patients at risk. For this purpose, a randomized, controlled trial with tailor-made treatment modules was conducted among patients with relatively early rheumatoid arthritis (RA disease duration of <8 years), who had been screened for psychosocial risk profiles. All participants received standard medical care from a rheumatologist and rheumatology nurse consultant. Patients in the CBT condition additionally received an individual CBT treatment with two out of four possible treatment modules. Choice of treatment modules was determined on the basis of patient priorities, which resulted in most frequent application of the fatigue module, followed by the negative mood, social relationships and pain and functional disability modules. Analyses of completers and of intention-to-treat revealed beneficial effects of CBT on physical, psychological and social functioning. Specifically, fatigue and depression were significantly reduced at post-treatment and at the 6-month follow-up in the CBT condition in comparison to the control condition, while perceived support increased at follow-up assessment. In addition, helplessness decreased at post-treatment and follow-up assessment, active coping with stress increased at post-treatment, and compliance with medication increased at follow-up assessment in the CBT condition in comparison to the control condition. Results indicate the effectiveness of tailor-made CBT for patients at risk in relatively early RA, and supply preliminary support for the idea that customizing treatments to patient characteristics may be a way to optimize CBT effectiveness in RA patients.

Fagan, D. J., W. Martin, and A. Smith. "A randomized, double-blind trial of pre-emptive local anesthesia in day-case knee arthroscopy." *Arthroscopy.* 19, no. 1(2003): 50-3 UI 12522402.

PURPOSE: The study goal was to assess the efficacy of pre-emptive analgesia in a clinical setting. TYPE OF STUDY: A block randomized, double-blind design was used. METHODS: Subjects were 40 patients undergoing day-case arthroscopy of the knee. The trial group received a prophylactic injection of bupivacaine with adrenaline. After surgery, a placebo injection was given. The postsurgical injection group received identical injections in reverse order. There was no difference in the mean dose of propofol used to maintain general anesthesia between groups: 15 mg/kg/h (standard deviation [SD] = 2.85) trial versus 14.6 mg/kg/h (SD = 1.96) postsurgical injection (95% confidence interval [CI] = -1.14 to 1.94). RESULTS: Although no statistically significant difference was observed in postoperative pain scores at 15, 30, or 60 minutes, there was a trend for the trial group to require less analgesia in recovery (chi2 = 9.74; P =.1). CONCLUSIONS: Prophylactic local anesthesia confers no statistically significant reduction in pain scores or perioperative general anesthetic requirements as compared with postoperative administration. The pre-emptive effect in clinical practice may be less dramatic than that observed in more controlled animal models. Further studies are required to investigate the magnitude of the pre-emptive effect in clinical practice.

Ferreira, M. L., et al. "Does spinal manipulative therapy help people with chronic low back pain?" *Australian Journal of Physiotherapy.* 48, no. 4(2002): 277-84 UI 12443522.

A systematic review of randomised clinical trials was conducted to assess the effect of spinal manipulative therapy on clinically relevant outcomes in patients with chronic low back pain. Databases searched included EMBASE, CINAHL, MEDLINE and PEDro. Methodological assessment of the trials was performed using the PEDro scale. Where there was sufficient homogeneity, a meta-analysis was conducted. Nine trials of mostly moderate quality were included in the review. Two trials were pooled comparing spinal manipulative therapy and placebo treatment, and two other trials were pooled comparing spinal manipulative therapy and non-steroidal anti-

inflammatory drugs (NSAIDs). Spinal manipulative therapy reduced pain by 7mm on a 100mm visual analogue scale (95% CI 1 to 14) at one month follow-up when compared with placebo treatment, and by 14mm (95% CI -11 to 40) when compared with NSAIDs. Spinal manipulative therapy reduced disability by 6 points (95% CI 1 to 12) on a 100-point disability questionnaire when compared with NSAIDs. It is concluded that spinal manipulation does not produce clinically worthwhile decreases in pain compared with sham treatment, and does not produce clinically worthwhile reductions in disability compared with NSAIDs for patients with chronic low back pain. It is not clear whether spinal manipulation is more effective than NSAIDs in reducing pain of patients with chronic low back pain. [References: 33]

Ferreira, P. H., et al. "Effect of applying different "levels of evidence" criteria on conclusions of Cochrane reviews of interventions for low back pain." *Journal of Clinical Epidemiology.* 55, no. 11(2002): 1126-9 UI 12507677.

The objective of this study was to examine the consistency of conclusions of Cochrane systematic reviews when different criteria are used to determine levels of evidence. We reanalyzed the data in six Cochrane reviews of conservative treatment of low back pain by applying three additional sets of "levels of evidence" criteria. Overall agreement between the conclusions attained with the different levels of evidence criteria was only "fair" (multirater kappa coefficient 0.33; 95% CI 0.28 to 0.38). For example, the four sets of levels of evidence criteria produced four conclusions on the efficacy of back school: "strong evidence that back schools are effective," "weak evidence," "limited evidence," and "no evidence." Pairwise agreement between the four pooling systems ranged from slight to substantial (kappas ranging from 0.10 to 0.80). Different rules for determining levels of evidence in systematic reviews produce markedly different conclusions on treatment efficacy. Crown

Finnerup, N. B., H. Gottrup, and T. S. Jensen. "Anticonvulsants in central pain." *Expert Opinion on Pharmacotherapy.* 3, no. 10(2002): 1411-20 UI 12387687.

Treatment of central neuropathic pain (CP) following lesions of the CNS is a great challenge to the clinician. Preclinical and clinical studies indicate that neuronal hyperexcitability in damaged areas of the central nervous system plays a major role in the development of CP. Anticonvulsants are thought to act by increasing gamma-aminobutyric acid-mediated inhibition, decreasing abnormal neuronal hyperexcitability by modulating sodium and calcium channels or by inhibiting excitatory amino acid actions. The resulting inhibition of excess neuronal activity is thought to be the basis for the use of anticonvulsants in epilepsy as well as neuropathic pain. Both first-generation anticonvulsant drugs (e.g., phenytoin, benzodiazepines, valproate and carbamazepine) and second-generation anticonvulsant drugs (e.g., lamotrigine, gabapentin and topiramate) are used in CP conditions. However, few randomised controlled trials on the treatment of this condition have been published. Present suggestions for anticonvulsant treatment of CP are lamotrigine as the first choice, followed by gabapentin or carbamazepine/oxcarbazepine. These compounds are considered as effective as the antidepressant amitriptyline. [References: 107]

Fishbain, D. A. "Analgesic effects of antidepressants.[comment]." *Journal of Clinical Psychiatry.* 64, no. 1(2003): 96; author reply 96-7 UI 12590632.

Foster, M. R. "Piriformis syndrome." *Orthopedics.* 25, no. 8(2002): 821-5 UI 12195908.

Seven patients underwent release of the piriformis from the femur. Patients with residual symptoms after conservative treatment had dramatic relief of sciatica and 70% resumed customary work after surgery. Minimum follow-up was 31 months

(average: 51 months). Early diagnosis can avoid prolonging ineffective empiric treatment and disability with satisfactory results achieved in most patients by conservative treatment and relief of sciatica in selected surgical cases.

Freund, B. J., and M. Schwartz. "Use of botulinum toxin in chronic whiplash-associated disorder." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S163-8 UI 12569964.

Whiplash-associated disorders (WADs) occur as a result of trauma and are often due to motor vehicle accidents and sports injuries. Cervical injury is attributed to rapid extension followed by neck flexion. The exact pathophysiology of WAD is uncertain but probably involves some degree of aberrant muscle spasms and may produce a wide range of symptoms. Initial treatment of pain associated with whiplash usually includes oral medications, such as muscle relaxants and nonsteroidal anti-inflammatory drugs. However, these agents are limited by potential systemic adverse effects. Some patients with chronic WAD may benefit from radiofrequency neurotomy. A new approach to treatment is the use of botulinum toxin, which acts to reduce muscle spasms. Type A toxin (Botox) has been studied in small trials of patients with WAD and has generally been found to relieve pain and improve range of motion. In addition, recent preliminary data from a small trial showed that type B toxin (Myobloc) produced almost immediate pain relief for most patients with post-whiplash headache. Although botulinum toxin has not been evaluated in large long-term trials, these initial data are promising and suggest a role for this agent in the treatment of WAD. Additional study is needed to identify the subset of patients with WAD who are most likely to respond to treatment with botulinum toxin.

Fujita, T., et al. "The effect of active absorbable algal calcium (AAA Ca) with collagen and other matrix components on back and joint pain and skin impedance." *Journal of Bone & Mineral Metabolism.* 20, no. 5(2002): 298-302 UI 12203036.

The effect of active absorbable algal calcium (AAA Ca) with collagen and other matrix components on aging-associated skin changes and backache and joint pain was tested in a case-controlled study of 40 test subjects and 40 age-matched control subjects (mean age, 65 years) complaining of backache and knee joint pain due to osteoarthritis, spondylosis deformans, and/or osteoporosis. Supplementation with 900 mg calcium (given as AAA Ca) and 3.5 g collagen and other matrix components, including glucosamine, daily for 4 months resulted in a marked alleviation of subjective pain, assessed by the face scale. A fall of skin impedance in response to exercise loads, such as standing up, walking, squatting, and climbing up and down stairs, reported as an objective manifestion of pain, was also alleviated. The basal skin impedance, which increases with age, was significantly reduced in response to the Ca-collagen-matrix supplementation, suggesting a change of skin properties similar to rejuvenation, along with subjective smoothening and moistening of the skin. Urinary excretion of N-terminal crosslinking telopeptide of type I collagen (NTx) was decreased in the Ca-collagen-matrix supplementation group, but not in the control group. In addition to calcium suppression of parathyroid hormone, preventing bone resorption, collagen, acting on the intestinal lymphatic system, may protect collagen from degradation through the inhibition of cytokine-induced release of metalloproteinases, including collagenase.

Furman, M. I., et al. "Quantification of abciximab-induced platelet inhibition is assay dependent: a comparative study in patients undergoing percutaneous coronary intervention." *American Heart Journal.* 145, no. 2(2003): e6 UI 12595861.

BACKGROUND: The best method for measuring the degree of platelet inhibition with glycoprotein (GP) IIb-IIIa antagonists during percutaneous coronary intervention (PCI) and the optimal degree of periprocedural inhibition is uncertain.

Low molecular weight heparins have been reported to cause less platelet activation than unfractionated heparin. Therefore, compared with unfractionated heparin (UHF), a low molecular weight heparin could enhance measured platelet inhibition. In this study, we compared 3 methods of measuring platelet inhibition and investigated the effects of half doses of abciximab in combination with either UFH or the low molecular weight heparin dalteparin in patients undergoing PCI with planned abciximab administration. METHODS: Abciximab-induced platelet inhibition was measured serially by means of 3 assays: 1) GP IIb-IIIa receptor occupancy, 2) binding of the activated GP IIb-IIIa-specific monoclonal antibody PAC1, and 3) agglutination of platelets with fibrinogen-coated beads (RPFA). Forty patients were randomly allocated to receive either UFH (70 U/kg) or dalteparin (60 IU/kg), followed by a half dose of abciximab (0.125 mg/kg) administered twice at 10-minute intervals. Assays were obtained 10 minutes after each half dose of abciximab and 8 to 10 and 24 hours after abciximab administration. RESULTS: No differences between UFH and dalteparin were observed. At each time-point measured, the mean percent platelet inhibition as determined by means of the receptor occupancy assay and PAC1 binding assay was less than the degree of inhibition determined by means of the RPFA. CONCLUSIONS: The results of targeted levels of platelet inhibition cannot be extrapolated between different clinical trials of GP IIb-IIIa antagonists unless the same assay is used. Dalteparin, compared with UFH, does not enhance platelet inhibition or receptor occupancy by abciximab, as demonstrated by means of 3 separate assays.

Furuhashi-Yonaha, A., et al. "Short- and long-term efficacy of oral ketamine in eight chronic-pain patients." *Canadian Journal of Anaesthesia.* 49, no. 8(2002): 886-7 UI 12374726.

Gao, C., et al. "Sensory and biomechanical responses to ramp-controlled distension of the human duodenum." *American Journal of Physiology - Gastrointestinal & Liver Physiology.* 284, no. 3(2003): G461-71 UI 12431908.

The aim of this study was to develop a new method for investigation of the relationship among the mechanical stimulus, the biomechanical properties, and the visceral perception evoked by volume/ramp-controlled distension in the human duodenum in vivo. An impedance planimetric probe for balloon distension was placed in the third part of the duodenum in seven healthy volunteers. Distension of the duodenum was done at infusion rates of 10, 25, and 50 ml/min. The pump was reversed when level 7 was reached on a visual analog scale ranging from 0 to 10. Distensions were done with and without the administration of the antimuscarinic drug butylscopolamine. The total circumferential tension (T(total)) and the passive circumferential tension (T(passive)) were determined from the distension tests without and with the administration of butylscopolamine, respectively. T(total) and T(passive) showed an exponential behavior as a function of strain (a measure of deformation). The active circumferential tension (T(active)) was computed as T(total)-T(passive) and showed a bell-shaped behavior as a function of strain. At low distension intensities, the intensity of sensation at 10 ml/min was significantly higher than that obtained at 25 and 50 ml/min. The coefficient of variation at the pain threshold for circumferential strain (average 4.34) was closer to zero compared with those for volume (8.72), pressure (31.22), and circumferential tension (31.55). This suggests that the mechanoreceptors in the gastrointestinal wall depend primarily on circumferential strain. The stimulus-response functions provided evidence for the existence of low- and high-threshold mechanoreceptors in the human duodenum. Furthermore, the data suggest that high-threshold receptors are nonadapting.

Gardell, L. R., et al. "Dynorphin-independent spinal cannabinoid antinociception." *Pain.* 100, no. 3(2002): 243-8 UI 12467995.

Spinal antinociception produced by delta 9-tetrahydro-cannabinol (Delta(9)-THC) and other cannabinoid agonists has been suggested to be mediated by the release of dynorphin acting at the kappa opioid receptor. Alternatively, as cannabinoid receptors are distributed appropriately in the pain transmission pathway, cannabinoid agonists might act directly at the spinal level to inhibit nociception, without requiring dynorphin release. Here, these possibilities were explored using mice with a deletion of the gene encoding prodynorphin. Antinociceptive dose-response curves were constructed for spinal Delta(9)-THC and WIN 55,212-2 in prodynorphin knock-out mice and in wild-type littermates. WIN 55,212-2 and Delta(9)-THC were equipotent in the wild-type and prodynorphin knock-out mice. Spinal pretreatment with a kappa opioid receptor antagonist, nor-binaltorphimine (nor-BNI), did not alter the dose-response curves for either WIN 55,212-2 or Delta(9)-THC in prodynorphin knock-out and wild-type mice. However, the same dose of nor-BNI used blocked U50,488H-induced antinociception in both wild-type and prodynorphin knock-out mice, confirming kappa opioid receptor activity. Pretreatment with SR141716A, a cannabinoid receptor antagonist blocked the antinociceptive actions of both WIN 55,212-2 and Delta(9)-THC. These data support the conclusion that antinociception produced by spinal cannabinoids are likely to be mediated directly through activation of cannabinoid receptors without the requirement for dynorphin release or activation of kappa opioid receptors.

Gardner, A. W. "Sex differences in claudication pain in subjects with peripheral arterial disease." *Medicine & Science in Sports & Exercise.* 34, no. 11(2002): 1695-8 UI 12439070.

PURPOSES: To compare the claudication distances between men and women patients with peripheral arterial disease (PAD), and to determine whether sex differences in claudication pain persisted after controlling for potential confounders such as demographic, functional, and physiological measures. METHODS: A total of 488 men and 72 women functionally limited by intermittent claudication were evaluated. Patients were characterized on PAD-specific measures consisting of ankle/brachial index (ABI) and treadmill claudication distances, physical function measures consisting of ambulatory function, monitored physical activity, balance, and strength, and demographic measures obtained during a medical history. RESULTS: Initial claudication distance (ICD) was 33% shorter (= 0.024) in women than in men (126 +/- 22 vs 189 +/- 13 m; mean +/- SEM), and absolute claudication distance (ACD) was 23% shorter (= 0.022) in women (313 +/- 43 vs 407 +/- 18 m). These differences were present despite similar (= 0.440) ABI values between women (0.63 +/- 0.02) and men (0.62 +/- 0.01). Peak oxygen uptake (= 0.043) and self-perceived stair climbing ability (= 0.020) were different between men and women, and were independently related to ICD (multiple R = 0.57, < 0.001) and to ACD (multiple R = 0.71, < 0.001). The sex differences in ICD (= 0.524) and ACD (= 0.722) were no longer present after controlling for peak oxygen uptake and self-perceived stair climbing ability. CONCLUSION: Shorter treadmill claudication distances in women with PAD were explained by their lower cardiopulmonary fitness and poorer self-perceived ability to climb stairs than compared with men. Therefore, women with intermittent claudication represent a subgroup of PAD patients who should receive high priority for exercise rehabilitation to improve physical function.

Gaughen, J. R., Jr., et al. "The therapeutic benefit of repeat percutaneous vertebroplasty at previously treated vertebral levels." *Ajnr: American Journal of Neuroradiology.* 23, no. 10(2002): 1657-61 UI 12427618.

BACKGROUND AND PURPOSE: Recurrent pain after vertebroplasty is relatively common, usually representing a new fracture at a different vertebral level. In a small cohort described herein, clinical and imaging findings indicated that recurrent pain

arose from abnormality of the previously treated level. Our purpose was to demonstrate that repeat percutaneous vertebroplasty performed within the same fractured vertebra can offer therapeutic benefit for patients with recurrent pain after initial treatment. METHODS: We conducted a retrospective review of consecutive vertebroplasty procedures performed at our institution to define a patient population that underwent repeat vertebroplasty for recurrent pain at previously treated vertebral levels. We identified six such patients over an 8-year period, and clinical outcomes were assessed through quantitative measurements of pre- and postoperative levels of pain and mobility. RESULTS: Initial vertebroplasty resulted in substantial improvement in pain in all six patients. Patients developed recurrent pain between 8 days and 167 days after initial vertebroplasty. After repeat vertebroplasty, five of the six patients reported a reduction of at least 3 points in their rating of pain, with a mean reduction of 6.5 points and a mean postoperative pain level of 3.5 points (11-point scale). Four of six patients reported impaired mobility before repeat vertebroplasty, and all four demonstrated a postoperative improvement in mobility. Mean increase in mobility was 1.50 points, and the mean postoperative mobility impairment was 0.25 points (5-point scale). CONCLUSION: The clinical outcomes of the patients within this case series suggest that repeat percutaneous vertebroplasty performed at previously treated vertebral levels for recurrent pain offer therapeutic benefit.

Gaumond, I., P. Arsenault, and S. Marchand. "The role of sex hormones on formalin-induced nociceptive responses." *Brain Research.* 958, no. 1(2002): 139-45 UI 12468038.

Many chronic pain conditions are more frequent in women than in men. This observation suggests that there is a potential role of sex hormones on pain perception. In the present study, we measured nociceptive responses to the formalin test in normal and gonadectomized male and female rats. The nociceptive responses to formalin injection were divided in four phases: acute (phase I), interphase and late phases (phases II and III). Four groups of rats were tested: (a) males (n = 15), (b) females (n = 16), (c) ovariectomized females (OVX) (n = 15) and (d) castrated males (CAST) (n = 15). Females presented significantly more nociceptive responses than males during phase I, interphase and phase II ($P < 0.01$). They also presented significantly more nociceptive responses than OVX females during the interphase ($P < 0.05$). CAST males presented significantly more nociceptive responses during the phases I ($P < 0.01$), II ($P < 0.01$) and III ($P < 0.05$) than the male rats. Finally, the responses of CAST males and OVX females were virtually identical, suggesting that the differences recorded between males and females in the formalin test were related to an activational effect of the sex hormones rather than an organizational effect. In conclusion, these results permit the support of the role of sex hormones on the modulation of pain perception. Interestingly, male and female sex hormones seem to act specifically on the different phases of the formalin test, suggesting some specific roles for sex hormones in different pain conditions. Copyright 2002 Elsevier Science B.V.

Glende, M., et al. "Extended analysis of a double-blind, placebo-controlled, 15-week study with otilonium bromide in irritable bowel syndrome." *European Journal of Gastroenterology & Hepatology.* 14, no. 12(2002): 1331-8 UI 12468954.

BACKGROUND/OBJECTIVE: In order to follow the most recent developments and recommendations in trial methodology for drug evaluation in patients with irritable bowel syndrome, we performed an extended analysis of a large clinical trial from a previously published study of otilonium bromide, using an assessment that integrates the key symptoms of irritable bowel syndrome. MATERIALS AND METHODS: A large-scale clinical trial with a double-blind, placebo-controlled, parallel-group study design was conducted in 378 patients, treated for 15 weeks with

the recommended standard dose of 40 mg otilonium bromide or placebo three times daily. The study was based on the collection of 12 single efficacy endpoints. The new efficacy assessment was based on the data reported by the patients. Rather than demonstrating score differences between the treatment groups of the study, we carried out an assessment that integrates the most frequent symptoms reported (pain frequency and intensity, presence of meteorism and distension) by the patient. RESULTS: The rate of response to treatment within 2-4 months (the primary efficacy outcome measure) was significantly higher in the otilonium bromide group (36.9%) than in the placebo group (22.5%; P = 0.007). In each month of treatment, the rate of monthly response was higher in the otilonium bromide group as compared to the placebo group (P < 0.05). The total monthly and weekly responses to the single endpoints (intensity and frequency of pain and discomfort, meteorism/abdominal distension, severity of diarrhoea or constipation and mucus in the stool) were significantly more frequent in the group treated with otilonium bromide than in the placebo-treated group, with differences ranging from 10% to 20%. The subgroup analysis of the intestinal habits endpoint indicates that patients with diarrhoea have an additional benefit. CONCLUSION: The present re-evaluation of a previously published study confirms that otilonium bromide is more effective than placebo for the treatment of irritable bowel syndrome, being very efficient in relieving pain and discomfort.

Gur, A., et al. "Effects of low power laser and low dose amitriptyline therapy on clinical symptoms and quality of life in fibromyalgia: a single-blind, placebo-controlled trial." *Rheumatology International.* 22, no. 5(2002): 188-93 UI 12215864.

The purpose of this study was to examine the effectiveness of low power laser (LPL) and low-dose amitriptyline therapy and to investigate effects of these therapy modalities on clinical symptoms and quality of life (QOL) in patients with fibromyalgia (FM). Seventy-five patients with FM were randomly allocated to active gallium-arsenide (Ga-As) laser (25 patients), placebo laser (25 patients), and amitriptyline therapy (25 patients). All groups were evaluated for the improvement in pain, number of tender points, skin fold tenderness, morning stiffness, sleep disturbance, muscular spasm, and fatigue. Depression was evaluated by a psychiatrist according to the Hamilton Depression Rate Scale and DSM IV criteria. Quality of life of the FM patients was assessed according to the Fibromyalgia Impact Questionnaire (FIQ). In the laser group, patients were treated for 3 min at each tender point daily for 2 weeks, except weekends, at each point with approximately 2 J/cm(2) using a Ga-As laser. The same unit was used for the placebo treatment, for which no laser beam was emitted. Patients in the amitriptyline group took 10 mg daily at bedtime throughout the 8 weeks. Significant improvements were indicated in all clinical parameters in the laser group (P = 0.001) and significant improvements were indicated in all clinical parameters except fatigue in the amitriptyline group (P = 0.000), whereas significant improvements were indicated in pain (P = 0.000), tender point number (P = 0.001), muscle spasm (P = 0.000), morning stiffness (P = 0.002), and FIQ score (P = 0.042) in the placebo group. A significant difference was observed in clinical parameters such as pain intensity (P = 0.000) and fatigue (P = 0.000) in favor of the laser group over the other groups, and a significant difference was observed in morning stiffness (P = 0.001), FIQ (P = 0.003), and depression score (P = 0.000) after therapy. A significant difference was observed in morning stiffness (P = 0.001), FIQ (P = 0.003), and depression (P = 0.000) in the amitriptyline group compared to the placebo group after therapy. Additionally, a significant difference was observed in depression score (P = 0.000) in the amitriptyline group in comparison to the laser group after therapy. Our study suggests that both amitriptyline and laser therapies are effective on clinical symptoms and QOL in fibromyalgia and that Ga-As laser therapy is a safe and

effective treatment in cases with FM. Additionally, the present study suggests that the Ga-As laser therapy can be used as a monotherapy or as a supplementary treatment to other therapeutic procedures in FM.

Hartmannsgruber, M. W., et al. "A method for overcoming the ceiling effect of bounded pain scales." *Journal of Clinical Monitoring & Computing.* 15, no. 7-8(1999): 455-9 UI 12578043.

OBJECTIVE: The Verbal Numerical Scale (VNS) for rating pain is bounded between 0 (= no pain) and 10 (= worst pain imaginable). We hypothesized that the limitations inherent to this boundary when rating extremely painful stimuli may be identified by integrating the VNS with an unbounded score such as magnitude estimation of relative change. METHODS: Volunteers received stimuli of increasing current via cutaneous electrodes until they rated >5 on the VNS scale. This stimulus, termed S, was arbitrarily assigned a magnitude estimate of 100%. Then, stimuli of varying currents were delivered; two were 10 mA and 20 mA higher than S (S(+10) and S(+20)), two were 1/2 of the current for the S stimulus (S(1/2)), and one was at the original current (Srepeat). The pain elicited by each stimulus was scored in proportion to the S stimulus. The extrapolated VNS score (VNSext) was determined by multiplying this magnitude estimate (%) by the VNS score for S. MAIN RESULTS: Seventy percent of the stimuli with higher intensity than S generated a VNSext score above 10. The mean magnitude estimations for S(+10) and S(+20) were 186% and 242%: they generated mean (median) VNSext values of 12.4 and 16.2, respectively ($p = 0.019$ for the difference between them by Wilcoxon signed rank test). CONCLUSIONS: The combined use of VNS and magnitude estimation confirmed that the ceiling of the bounded pain scale may significantly limit a patient's ability to describe a new pain stimulus. VNSext may provide a means of overcoming this limitation.

Heidenreich, A., P. Olbert, and U. H. Engelmann. "Management of chronic testalgia by microsurgical testicular denervation." *European Urology.* 41, no. 4(2002): 392-7 UI 12074809.

OBJECTIVES: Chronic testicular pain (CTP) is defined as uni- or bilateral, intermittent or continuous testicular discomfort of at least 3 months duration that interferes with the patient's daily activities and prompts him to seek medical advice is a rather common urological manifestation of chronic pain syndrome. Diagnosis and treatment of CTP has been a difficult and often unrewarding clinical situation. Success rates of conservative and surgical measures including epididymectomy and orchiectomy rarely exceed 55-73% and 10-40%, respectively. We report our experience on microsurgical testicular denervation as therapeutic option in CTP. PATIENTS AND METHODS: Following an extensive preoperative work-up (urine/semen cultures, transrectal ultrasound, testicular sonography, pain and orthopedic consultation) not revealing any pathologic abnormalities and a positive response to spermatic cord block, 35 patients underwent microsurgical testicular denervation. In brief, spermatic cord was dissected, vas deferens, cremasteric muscle and testicular vessels were separated. After identification of the testicular artery by application of vasodilatating agents using magnifying loops or the operating microscope, all structures besides the testicular artery, vas deferens and 1-2 lymphatic vessels were coagulated and transsected using bipolar diathermy. RESULTS: After a mean follow-up of 31.5 months 34/35 (96%) patients are completely pain-free; no intra- or postoperative complications were encountered. No case of testicular atrophy or hydrocele formation was observed during postoperative follow-up. CONCLUSIONS: Microsurgical testicular denervation results in reliable and reproducible excellent therapeutic success rates of 96% and should be integrated in the management of CTP at an early stage. High success rates require adequate and meticulous diagnostic work-up of the patients by spermatic cord block using saline as

placebo and different local anaesthetics as an initial therapeutic armentarium predicting postoperative outcome.

Hemingway, A. E., L. Herrington, and A. L. Blower. "Changes in muscle strength and pain in response to surgical repair of posterior abdominal wall disruption followed by rehabilitation." *British Journal of Sports Medicine.* 37, no. 1(2003): 54-8 UI 12547744.

BACKGROUND: Posterior abdominal wall deficiency (PAWD) is a tear in the external oblique aponeurosis or the conjoint tendon causing a posterior wall defect at the medial end of the inguinal canal. It is often known as sportsman's hernia and is believed to be caused by repetitive stress. OBJECTIVE: To assess lower limb and abdominal muscle strength of patients with PAWD before intervention compared with matched controls; to evaluate any changes following surgical repair and rehabilitation. METHODS: Sixteen subjects were assessed using a questionnaire, isokinetic testing of the lower limb strength, and pressure biofeedback testing of the abdominals. After surgery and a six week rehabilitation programme, the subjects were re-evaluated. A control group were assessed using the same procedure. RESULTS: Quadriceps and hamstrings strength was not affected by this condition. A deficit hip muscle strength was found on the affected limb before surgery, which was significant for the hip flexors ($p = 0.05$). Before surgery, 87% of the patients compared with 20% of the controls failed the abdominal obliques test. Both the injured and non-injured sides had improved significantly in strength after surgery and rehabilitation. The strength of the abdominal obliques showed the most significant improvement over the course of the rehabilitation programme. CONCLUSIONS: Lower limb muscle strength may have been reduced as the result of disuse atrophy or pain inhibition. Abdominal oblique strength was deficient in the injured patients and this compromises rotational control of the pelvis. More sensitive investigations (such as electromyography) are needed to assess the link between abdominal oblique function and groin injury.

Henderson, M. M. "A 67-year-old man with increasing severe lower back pain since the night before." *Journal of Emergency Nursing.* 29, no. 1(2003): 9-11 UI 12556822.

Henderson, S. O., S. Swadron, and E. Newton. "Comparison of intravenous ketorolac and meperidine in the treatment of biliary colic." *Journal of Emergency Medicine.* 23, no. 3(2002): 237-41 UI 12426013.

To compare the analgesic efficacy and tolerability of intravenous (IV) ketorolac tromethamine with IV meperidine in the treatment of biliary colic, a prospective, randomized, double blind study was carried out upon a convenience sample of patients at a large inner city facility. Patients between the ages of 18 and 65 years of age with a history and physical examination consistent with biliary colic were enrolled over a 2-year period. Patients were randomly assigned to receive ketorolac 30 mg IV or meperidine 50 mg IV. Pain was quantified using a 4-point verbal rating system (VRS) as well as a visual analog scale (VAS). Patients were queried about their pain at times 0, 12 h, 1 h, and 2 h after administration of the study medication. Adverse effects were also recorded. A total of 324 patients completed the study protocol with 175 patients receiving ketorolac and 149 receiving meperidine. Patient demographics were similar for both groups with mean age for the ketorolac group of 36.1 years and for the meperidine group of 34.6 years. Both groups were predominantly Latino and over 80% of patients in both groups were female. No significant difference in pain control was found between ketorolac and meperidine in either the VAS or VRS for any time interval studied. The mean change in the VAS at time 2 h was 6.2 cm +/- 3.6 cm for the ketorolac group, compared with 6.7 cm +/- 3.6 cm for the meperidine group ($p = 0.25$). Although no significant difference was

found in overall drug tolerability, patients receiving meperidine reported higher incidences of nausea and of dizziness than those receiving ketorolac (p = 0.009 and 0.003, respectively). Ketorolac tromethamine is a well-tolerated, effective medication in the treatment of acute biliary colic. It showed similar efficacy to meperidine with a decreased number of adverse effects. Copyright 2002 Elsevier Science Inc.

Heuft-Dorenbosch, L., et al. "Assessment of enthesitis in ankylosing spondylitis." *Annals of the Rheumatic Diseases.* 62, no. 2(2003): 127-32 UI 12525381.

OBJECTIVE: To assess, firstly, the validity of the enthesis index published by Mander (Mander enthesis index (MEI)) and, secondly, to investigate whether it is possible to define a new enthesis index that is less time consuming to perform with at least similar or better properties. METHODS: Data from the OASIS cohort, an international, longitudinal, observational study on outcome in ankylosing spondylitis, were used. In this study, measures of disease activity, including the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and the MEI, were assessed regularly in 217 patients. With the MEI, for each measurement period independently, a process of data reduction was performed to identify the entheses most commonly reported as painful by the patients. A more concise enthesis index was constructed with aid of the entheses found in this way. Correlations with measures of disease activity were used to test the validity of several entheses indices. RESULTS: Reduction of the number of entheses from 66 to 13 and omitting grading of the intensity of pain resulted in an index which was named the "Maastricht Ankylosing Spondylitis Enthesitis Score" (MASES). The MASES (range 0-13) has much greater feasibility than the MEI (range 0-90). However, up to 21% of patients with a score >0 on the MEI were not identified by a score on the MASES >0. Only 2.1% of the patients with an original enthesis score >0 had an original score on the MEI >3 (range 0-90) and it can be questioned whether a low score on the MEI index represents clinically important enthesitis. The Spearman correlation coefficient between the MASES score and the MEI was 0.90 and between the MASES and the BASDAI was 0.53 compared with a correlation of 0.59 between the MEI and the BASDAI. CONCLUSIONS: MASES seems to be a good alternative to the MEI with much better feasibility.

Hilbert, J. E., G. A. Sforzo, and T. Swensen. "The effects of massage on delayed onset muscle soreness." *British Journal of Sports Medicine.* 37, no. 1(2003): 72-5 UI 12547748.

OBJECTIVES: The purpose of this study was to investigate the physiological and psychological effects of massage on delayed onset muscle soreness (DOMS). METHODS: Eighteen volunteers were randomly assigned to either a massage or control group. DOMS was induced with six sets of eight maximal eccentric contractions of the right hamstring, which were followed 2 h later by 20 min of massage or sham massage (control). Peak torque and mood were assessed at 2, 6, 24, and 48 h postexercise. Range of motion (ROM) and intensity and unpleasantness of soreness were assessed at 6, 24, and 48 h postexercise. Neutrophil count was assessed at 6 and 24 h postexercise. RESULTS: A two factor ANOVA (treatment v time) with repeated measures on the second factor showed no significant treatment differences for peak torque, ROM, neutrophils, unpleasantness of soreness, and mood (p > 0.05). The intensity of soreness, however, was significantly lower in the massage group relative to the control group at 48 h postexercise (p < 0.05). CONCLUSIONS: Massage administered 2 h after exercise induced muscle injury did not improve hamstring function but did reduce the intensity of soreness 48 h after muscle insult.

Hodges, S. D., S. C. Humphreys, and J. C. Eck. "Effect of spirituality on successful recovery from spinal surgery." *Southern Medical Journal.* 95, no. 12(2002): 1381-4 UI 12597302.

BACKGROUND: Many patients believe prayer helps them recover from health problems. Benefits of spirituality on other illnesses and surgical procedures have been reported. It is unknown whether patients with strong spiritual beliefs have a greater propensity for successful recovery from spinal surgery. METHODS: In this study, 188 patients having spinal surgery completed the visual analog pain scale (VAS) and the Oswestry functional capacity questionnaire (OSW) before and after operation, and the scores were used to assess surgical outcome. Degree of spirituality was assessed using the INSPIRIT survey. RESULTS: Paired t test revealed significant improvements in both the VAS and OSW outcome measures. Linear regression analysis revealed no correlation between change in either VAS or OSW. CONCLUSIONS: These results suggest that recovery from spinal surgery may be more dependent on proper patient selection and surgical technique than on patient spiritual beliefs.

Hoekstra, J. W., et al. "Improving the care of patients with non-ST-elevation acute coronary syndromes in the emergency department: the CRUSADE initiative." *Academic Emergency Medicine.* 9, no. 11(2002): 1146-55 UI 12414463.

Although acute coronary syndromes (ACS) represent a well-recognized source of morbidity and mortality for patients with cardiovascular disease, evidence-based therapies shown to improve outcomes for ACS are frequently underused in appropriate patients, especially in the emergency department (ED). Despite dissemination of expert recommendations from the American College of Cardiology/American Heart Association (ACC/AHA) and ED-focused recapitulation of them in the emergency medicine literature, significant barriers continue to limit the adoption of guidelines in clinical practice and appear to hinder the use of beneficial therapies and interventions in the ED. Unique and creative approaches are therefore needed to stimulate better adherence to practice guidelines and improve the quality of care for patients with non-ST-elevation myocardial infarction (NSTE) ACS. The CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress ADverse Outcomes with Early Implementation of the ACC/AHA Guidelines) quality improvement and educational initiative provides an innovative and multifaceted approach to the education of emergency physicians and cardiologists in the care of patients with NSTE ACS. The CRUSADE initiative is a multidisciplinary cooperative effort involving over 400 EDs and medical centers. It includes an ACS registry designed to characterize demographic patterns and risk stratification results in patients who meet diagnostic criteria for high-risk NSTE ACS. It also measures the use of ED treatment modalities including aspirin, heparin, beta-blockers, and platelet inhibitors as recommended in the ACC/AHA guidelines. The results of a given institution's treatment patterns will be reported back to the practitioners, with comparisons with national norms. These reports can be used as quality improvement tools to improve care at participating institutions. Beyond a static registry, these reports are coupled with educational efforts by the CRUSADE steering committee, scientific publications of risk stratification practice and success, as well as ED patterns of care, and tailored educational interventions, to reinforce compliance with the ACC/AHA guidelines. This initiative represents a truly innovative approach to improving care for ACS patients in the ED as well as on the cardiology service. This article describes the CRUSADE initiative and its implications for the practicing emergency physician. It is the intent of CRUSADE to improve patient care in the ED by tracking and encouraging compliance with evidence-based guidelines for the evaluation and management of NSTE ACS.

Honderick, T., et al. "A prospective, randomized, controlled trial of benzodiazepines and nitroglycerine or nitroglycerine alone in the treatment of cocaine-associated acute coronary syndromes." *American Journal of Emergency Medicine.* 21, no. 1(2003): 39-42 UI 12563578.

The purpose of the present study was to compare the use of lorazepam plus nitroglycerine (NTG) versus NTG alone in the reduction of cocaine induced chest pain in the emergency department. The secondary objective of the study was to help determine the safety of lorazepam in the treatment of cocaine- associated chest pain. The study was a prospective, randomized, single-blinded, controlled trial conducted at an university-affiliated urban emergency department (ED). All patients who presented with cocaine-associated chest pain were enrolled. Exclusion criteria included age greater than 45 years, documented coronary artery disease, chest pain of more than 72 hours duration, or pretreatment with nitroglycerin. Patients were given either sublingual nitroglycerine (SL NTG) (Group 1) or SL NTG plus 1 mg of lorazepam intravenously (Group 2) every 5 minutes for a total of 2 doses. Chest pain was recorded on an ordinal scale of 0 to 10 at baseline, and then at 5 minutes after each dose. Adverse reactions to medication were also recorded. Twenty-seven patients met the inclusion criteria and were enrolled in the study. The average age of these subjects was 34.1 years, and 67% were men. The NTG-only group consisted of 15 patients and the NTG-plus-lorazepam group consisted of 12 patients. Baseline mean chest-pain scores were 6.87 in Group 1 and 6.54 in Group 2, with no differences between groups. Five minutes after initial treatment, mean scores for the two groups were 5.2 and 3.9, respectively, with a difference in means of 1.24 (95% confidence interval [CI] -0.8-3.8). Five minutes after the second treatment, the mean scores were 4.6 and 1.5, respectively, with a difference in means of 3.1 (95% CI 1.2-5). Kruskal-Wallis testing showed a significant difference in pain relief between the two study groups (P =.003), with greater pain relief noted at 5 and 10 minutes in the NTG-plus-lorazepam group (P =.02 and P =.005, respectively). All patients in the study were admitted to the hospital, but no patient in either group had an acute myocardial infarction or cardiac complications in the ED. No adverse side effects were noted for either group. The early use of lorazepam with NTG was more efficacious than NTG alone, and appears to be safe in relieving cocaine-associated chest pain. Copyright 2003, Elsevier Science (USA). All rights reserved.)

Hournbuckle, W. "Patient education on pain management." *Prairie Rose.* 71, no. 4(2002): 26-9; quiz 30 UI 12567849.

Howard, P. A. "New treatment guidelines for unstable angina/non-ST-segment elevation myocardial infartion." *Annals of Pharmacotherapy.* 36, no. 11(2002): 1800-4 UI 12432893.

Hubbard, R. C., et al. "Parecoxib sodium has opioid-sparing effects in patients undergoing total knee arthroplasty under spinal anaesthesia." *BJA: British Journal of Anaesthesia.* 90, no. 2(2003): 166-72 UI 12538372.

BACKGROUND: This multicentre, double-blind, placebo-controlled study compared the opioid-sparing effectiveness and clinical safety of parecoxib sodium over 48 h, in 195 postoperative patients after routine total knee replacement surgery. METHODS: Elective total primary knee arthroplasty was performed under spinal anaesthesia, with a single dose of spinal bupivacaine 10-20 mg, and intraoperative sedation with midazolam 0.5-1.0 mg i.v., or propofol <6 mg kg(-1)h(-1). Patients were randomized to receive either parecoxib sodium 20 mg twice daily (bd) i.v. (n=65), parecoxib sodium 40 mg bd i.v. (n=67), or placebo (n=63) at the completion of surgery, and after 12, 24, and 36 h. Morphine (1-2 mg) was taken by patient-controlled analgesia or by bolus doses after 30 min. RESULTS: Patients receiving parecoxib sodium 20 mg bd and 40 mg bd consumed 15.6% and 27.8% less morphine at 24 h than patients taking placebo (both P<0.05). Both doses of parecoxib sodium administered with morphine provided significantly greater pain relief than morphine alone from 6 h (P<0.05). A global evaluation of study medication demonstrated a greater level of satisfaction among patients taking

parecoxib sodium than those taking placebo. Parecoxib sodium administered in combination with morphine was well tolerated. However, a reduction in opioid-type side-effects was not demonstrated in the parecoxib sodium groups. CONCLUSION: Parecoxib sodium provides opioid-sparing analgesic effects in postoperative patients.

Idvall, E., et al. "Patient and nurse assessment of quality of care in postoperative pain management." *Quality & Safety in Health Care.* 11, no. 4(2002): 327-34 UI 12468692.

OBJECTIVE: To describe and compare patient and nurse assessments of the quality of care in postoperative pain management, to investigate differences between subgroups of patients, and to compare patient assessments in different departments. DESIGN: Patient and nurse questionnaires. SETTING: Five surgical wards in general surgery, orthopaedics, and gynaecology in a central county hospital in Sweden. SAMPLE: Two hundred and nine inpatients and 64 registered nurses. The response rates were 96% for the patients and 99% for the nurses; there were 196 paired patient-nurse assessments. METHOD: The Strategic and Clinical Quality Indicators in Postoperative Pain Management patient questionnaire was used which comprises 14 items in four subscales (communication, action, trust, and environment). The items were scored on a 5 point scale with higher values indicating a higher quality of care. Five complementary questions on levels of pain intensity and overall satisfaction with pain relief were scored on an 11 point scale. Twelve of the 14 items in the patient questionnaire and two of the complementary questions were adjusted for use in the nurse questionnaire. RESULTS: The patients' mean (SD) score on the total scale (scale range 14-70) was 58.6 (8.9) and the nurses' mean (SD) score (scale range 12-60) was 48.1 (6.2). The percentage of patients who scored 1 or 2 for an individual item (disagreement) ranged from 0.5% to 52.0%, while for nurses the percentage ranged from 0.0% to 34.8%. Forty two patients (24%) reported more pain than they expected; these patients assessed the quality of care lower. There were differences between patient and nurse assessments concerning the environment subscale, the question on overall satisfaction, and patients' experience of worst possible pain intensity. CONCLUSION: The results provided valuable baseline data and identified important areas for quality improvement in postoperative pain management.

Im, E. O., and W. Chee. "Decision support computer program for cancer pain management." *CIN: Computers, Informatics, Nursing.* 21, no. 1(2003): 12-21 UI 12544150.

The purpose of the study was to develop an initial version of computer software that could assist nurses' decision making about cancer pain reported by women from diverse cultural groups. This cross-sectional study included two phases: (1) data collection and (2) development of computer software. Data were collected using an Internet survey and e-mail group discussions of 19 faculty members from 10 countries who were self-identified experts in oncology nursing. The data were analyzed using descriptive statistics and content analysis. The findings indicated ethnic, gender, geographic, and age differences in cancer pain descriptions. Based on the collected data, a decision support computer program for cancer pain management, including (1) a knowledge base generation module, (2) a decision-making module, and (3) a self-adaptation module, was developed. Based on the study findings, suggestions for future research and practice related to cancer pain and expert systems were proposed.

Immer, F. F., et al. "Pain treatment with a COX-2 inhibitor after coronary artery bypass operation: a randomized trial." *Annals of Thoracic Surgery.* 75, no. 2(2003): 490-5 UI 12607659.

BACKGROUND: Adequate analgesic medication is mandatory after cardiac operations. Cyclooxygenase-2 inhibitors represent a new therapeutic option, acting primarily on the response to inflammation. METHODS: We compared a cyclooxygenase-2 inhibitor (etodolac) with two traditional drugs: a nonselective cyclooxygenase inhibitor (diclofenac) and a weak opioid (tramadol) on postoperative pain and renal function in patients undergoing coronary artery bypass operations. Sixty consecutive patients were randomized into three groups: (1) group A patients who received tramadol; (2) group B patients who received diclofenac; and (3) group C patients who received etodolac. For measurement of analgesic effect, the visual analogue scale was assessed up to postoperative day 4. Creatinine-clearance was determined before and at the end of study medication, and serum creatinine and urea were monitored daily for renal effects. Study medication was given on postoperative days 2 and 3. Side effects and additional pain medication were recorded. RESULTS: The visual analogue scale was lower in group C ($p < 0.05$) from postoperative days 2 to 4 and in group B ($p < 0.05$) from postoperative days 3 to 4 compared with group A. Amount of additional pain medication and incidence of side effects were significantly less in group C compared with group A. We observed a short-lasting elevation of serum creatinine and urea in groups B and C compared with group A ($p < 0.05$). CONCLUSIONS: At the doses analyzed, etodolac and diclofenac produced better postoperative pain relief with less side-effects than tramadol. A short-lasting impairment of renal function was found in patients treated with etodolac and diclofenac.

Innocenti, M., G. Moscatelli, and S. Lopez. "Efficacy of gelclair in reducing pain in palliative care patients with oral lesions: preliminary findings from an open pilot study." *Journal of Pain & Symptom Management.* 24, no. 5(2002): 456-7 UI 12547044.

Izzedine, H., et al. "Pharmacokinetics of tramadol in a hemodialysis patient." *Nephron.* 92, no. 3(2002): 755-6 UI 12372979.

Jellish, W. S., et al. "The effect of spinal bupivacaine in combination with either epidural clonidine and/or 0.5% bupivacaine administered at the incision site on postoperative outcome in patients undergoing lumbar laminectomy." *Anesthesia & Analgesia.* 96, no. 3(2003): 874-80, table of contents UI 12598277.

Spinal anesthesia has numerous advantages over general anesthesia for patients undergoing lumbar laminectomy and microdisk surgery. In this study, we evaluated the addition of epidural clonidine and/or bupivacaine, injected at the incision site, on postoperative outcome variables in patients undergoing lower spine procedures using spinal anesthesia. One hundred twenty patients having lumbar spine surgery received bupivacaine spinal anesthesia supplemented by 150 microg of epidural clonidine with or without incisional bupivacaine, epidural placebo plus incisional bupivacaine, or placebo with incisional saline. Demographic data, intraoperative hemodynamics, blood loss, pain, nausea, urinary retention, hospital discharge, and other variables were compared by using either analysis of variance or chi(2) analysis. Demographics were similar. IV fluids, blood loss, incidence of intraoperative bradycardia, and hypotension were not different among groups. Postanesthesia care unit pain scores were lower and demand for analgesics was less in patients who received both the clonidine and subcutaneous bupivacaine. Patients who received epidural clonidine also had improved postoperative hemodynamics. Hospital discharge, urinary retention, and other variables were not different. We conclude that epidural clonidine as a supplement to spinal anesthesia produced no perioperative complications and improved postoperative pain and hemodynamic stability in patients undergoing lower spine procedures. IMPLICATIONS: Spinal anesthesia with supplemental epidural clonidine in combination with incision site

subcutaneous bupivacaine was evaluated both intra- and postoperatively and compared with spinal anesthesia alone for lower lumbar spine procedures. Both epidural clonidine and subcutaneous incisional bupivacaine, added to spinal anesthesia for lumbar spine surgery, improves pain relief and reduces the need for postoperative opioids with their associated side effects.

Jonas, J. B., M. Jager, and T. M. Hemmerling. "Anesthesia through a novel retrobulbar catheter provides perioperative pain control for 24 h after pars plana vitrectomy." *European Journal of Ophthalmology.* 12, no. 6(2002): 512-7 UI 12516533.

PURPOSE: The purpose of this study was to assess the retrobulbar catheter technique for perioperative pain control in pars plana vitrectomy. METHODS: One hundred consecutive pars plana vitrectomies (duration 20-220 minutes) in 88 patients (age range 37-88 years) were performed by the same surgeon under retrobulbar anesthesia using a commercially available retrobulbar needle. Initially, 7 ml of mepivacaine 2% were injected, a 28-gauge flexible catheter was introduced into the retrobulbar space and the needle was withdrawn. The catheter was removed 24 h after surgery. Intraoperatively and postoperatively, the patients were asked to rate pain using a numerical scale from 0 to 10. When pain was more than grade 3, 2 ml of a local anesthetic were re-injected through the catheter. RESULTS: A first re-injection was given intraoperative/y 53.0 +/- 34.6 minutes after the start of surgery during 35/100 procedures, and second and third injections were needed during 12 /100 and 4/100 procedures, respectively. The first postoperative re-injection was given 3.9 +/- 1.5 hours after the start of surgery in 54 procedures, and second and third injections were carried out in 35/100 and 10/100 procedures respectively. CONCLUSIONS: The results suggest that a temporary indwelling retrobulbar catheter allows long-lasting titratable local anesthesia during pars plana vitrectomy and titratable postoperative analgesia.

Kacar, F., et al. "A limited form of Churg-Strauss syndrome presenting as acute abdominal catastrophe." *Virchows Archiv.* 441, no. 6(2002): 632-4 UI 12587603.

Kairaluoma, M., K. Nuorva, and I. Kellokumpu. "Day-case stapled (circular) vs. diathermy hemorrhoidectomy: a randomized, controlled trial evaluating surgical and functional outcome." *Diseases of the Colon & Rectum.* 46, no. 1(2003): 93-9 UI 12544528.

PURPOSE: Stapled hemorrhoidectomy may be associated with less pain and faster recovery than conventional hemorrhoidectomy for prolapsing hemorrhoids. Therefore, the outcome of stapled hemorrhoidectomy was compared with that of diathermy hemorrhoidectomy in a randomized, controlled trial. METHODS: Sixty patients with third-degree hemorrhoids were randomly assigned to stapled hemorrhoidectomy (n = 30) or to diathermy hemorrhoidectomy in a day-case setting. Visual analog scale was used for postoperative pain scoring. Surgical and functional outcome was assessed at six weeks and one year after surgery. RESULTS: Operation time was a median of 21 (range, 11-59) minutes in the stapled group. 22 (range, 14-40) minutes in the diathermy group. Day-case surgery was successful in 24 patients (80 percent) in the stapled group vs. 29 patients (97 percent) in the diathermy group. Average pain in the stapled group was significantly lower than in the diathermy group (median, 1.8 (0.1-4.8) vs. 4.3 (1.4-6.2), 95 percent confidence interval difference medians, 1.15-3.85, P = 0.0002, Mann-Whitney U test) as was the average pain expected by the patients (median -2.7 (-0.15-0.8) vs. 0.006 (-4.05-0.5) respectively, 95 percent confidence interval difference medians, 0.5-3.55, P = 0.0018, Mann-Whitney U test). Postoperative morbidity and time off work were not significantly different between the diathermy and stapled groups. Seven treatment failures in the stapled group and one in the diathermy group necessitated

other treatments at a later date. Patient satisfaction scores in the stapled and diathermy group were similar. Symptoms attributed to difficult rectal evacuation decreased significantly after surgery. CONCLUSIONS: Stapled hemorrhoidectomy is a significantly less painful operation than diathermy hemorrhoidectomy, but does not seem to offer significant advantages in terms of hospital stay or symptom control in the long term. Hemorrhoidectomy may improve symptoms of difficult rectal evacuation.

Kalus, J. S., and C. M. White. "Amlodipine versus Angiotensin-receptor blockers for nonhypertension indications." *Annals of Pharmacotherapy.* 36, no. 11(2002): 1759-66 UI 12398574.

OBJECTIVE: To review the efficacy and safety data of amlodipine and the angiotensin-receptor blockers (ARBs), focusing on heart failure, angina, percutaneous coronary intervention (PCI), and renal protection. DATA SOURCE: A MEDLINE search (1966-December 2001) was completed using amlodipine, angiotensin-receptor antagonist, losartan, valsartan, candesartan, and telmisartan as key words. English-language articles were identified and included. STUDY SELECTION AND DATA EXTRACTION: All identified articles were evaluated. Articles representative of the subject matter of our review were included. DATA SYNTHESIS: Amlodipine and the ARBs lower blood pressure to a similar extent. Amlodipine is an effective antianginal agent, whereas ARBs are not. However, amlodipine is not effective in the treatment of heart failure; ARBs may be useful in this setting. ARBs are also effective in preserving renal function and may provide some protection from restenosis in patients who have had a PCI. The ARBs may also be useful in preventing both diabetic and nondiabetic nephropathy. CONCLUSIONS: Concomitant disease states should be considered when choosing between an ARB and amlodipine for the management of hypertension. [References: 47]

Kamal, K., A. Zini, and K. Jarvi. "Testicular block using intra-testicular lidocaine: a new anaesthetic technique for percutaneous testis biopsy." *Canadian Journal of Urology.* 9, no. 3(2002): 1568-70; discussion 1571 UI 12121584.

PURPOSE: We describe a simple technique to deliver local anaesthetic for percutaneous testis biopsies. MATERIALS AND METHODS: With the testis held firmly, a 25 gage needle is used to inject lidocaine, without epinephrine, into the skin and dartos superficial to the testis, then the needle is advanced through the tunica albuginea and 0.5 mL to 1.0 mL of lidocaine is injected directly into the testis. The testis becomes slightly more turgid with the injection. A percutaneous biopsy is then immediately performed. RESULTS: Intra-testicular lidocaine, (without need of a cord block or any sedation) was used on a total of 45 consecutive patients having percutaneous testicular biopsies. Procedure time was short (averages less than 5 minutes) and anaesthesia was profound. There was no change in the number of seminiferous tubules for evaluation compared to biopsies on men using a cord block. Only 1/45 men had a post-procedure testicular hematoma (this resolved in 4 weeks). CONCLUSIONS: Intra-testicular lidocaine appears to be a simple, rapid and safe method to provide anaesthesia for a percutaneous testis biopsy.

Kampe, S., et al. "Epidural combination of ropivacaine with sufentanil for postoperative analgesia after total knee replacement: a pilot study." *European Journal of Anaesthesiology.* 19, no. 9(2002): 666-71 UI 12243290.

BACKGROUND AND OBJECTIVE: We assessed the analgesic efficacy of postoperative epidural infusions of ropivacaine 0.1 and 0.2% combined with sufentanil 1 microg mL(-1) in a prospective, randomized, double-blinded study. METHODS: Twenty-two ASA I-III patients undergoing elective total-knee replacement were included. Lumbar epidural blockade using ropivacaine 0.75% was combined with either propofol sedation or general anaesthesia for surgery. After

surgery, the epidural infusion was commenced. Eleven patients in each group received either an epidural infusion of ropivacaine 0.1% with 1 microg mL(-1) sufentanil (Group 1) or ropivacaine 0.2% with 1 microg mL(-1) sufentanil (Group 2) at a rate of 5-9 mL h(-1). All patients had access to intravenous pirinatrimide (piritramide) via a patient-controlled analgesia (PCA) device. RESULTS: Motor block was negligible for the study duration in both groups. There was no significant difference with the 100 mm visual analogue scale (VAS) scores, with the consumption of rescue analgesia or with patient satisfaction. Patients in Group 1 experienced significantly less nausea ($P < 0.05$) than those in Group 2. Both treatment regimens provided effective postoperative analgesia with only a minimal use of supplemental opioid PCA. CONCLUSIONS: We recommend the use of ropivacaine 0.1% with 1 microg mL(-1) sufentanil for postoperative analgesia after total knee replacement as it provides efficient pain relief with no motor block of the lower limbs. In addition, compared with 0.2% ropivacaine with sufentanil, the mixture reduces local anaesthetic consumption without compromise in patient satisfaction or VAS scores. Patients even experience less nausea.

Karaca, S., and E. O. Unlusoy. "Accidental injection of intravenous bupivacaine." *European Journal of Anaesthesiology.* 19, no. 8(2002): 616-7 UI 12200956.

Karibe, H., G. Goddard, and R. W. Gear. "Sex differences in masticatory muscle pain after chewing." *Journal of Dental Research.* 82, no. 2(2003): 112-6 UI 12562883.

Neither the etiology of muscle-related temporomandibular disorders (TMD) nor the reason for the disproportionate number of women suffering from these disorders is well-established. We tested the hypothesis that physiologically relevant exercise (i.e., chewing bubble gum for 6 min) increases masticatory muscle pain in patients, but not in asymptomatic control subjects, and that female patients experience a significantly greater increase than males. Chewing increased pain in both female and male patients and, unexpectedly, also in female control subjects. One hour after chewing, the pain remained above pre-test levels for female patients but not for the other groups. Thus, sex differences in chewing-induced pain were found in control subjects but not as hypothesized in patients. Because chewing-induced masticatory muscle pain was significantly greater in female control subjects than in males, and persisted longer in female patients than in males, these results suggest greater susceptibility in women.

Karmakar, M. K., et al. "Continuous thoracic paravertebral infusion of bupivacaine for pain management in patients with multiple fractured ribs." *Chest.* 123, no. 2(2003): 424-31 UI 12576361.

STUDY OBJECTIVE: To evaluate the efficacy of a continuous thoracic paravertebral infusion of bupivacaine for pain management in patients with unilateral multiple fractured ribs (MFR). DESIGN: Prospective nonrandomized case series. SETTING: Multidisciplinary tertiary hospital. PATIENTS: Fifteen patients with unilateral MFR. INTERVENTIONS: Insertion of a catheter into the thoracic paravertebral space. We administered an initial injection of 0.3 mL/kg (1.5 mg/kg) bupivacaine 0.5% with 1:200,000 epinephrine followed 30 min later by an infusion of bupivacaine 0.25% at 0.1 to 0.2 mL/kg/h for 4 days. Measurements and results: The following parameters were measured during the initial assessment before thoracic paravertebral block (TPVB), 30 min after the initial injection, and during follow-up on day 1 and day 4 after commencing the infusion of bupivacaine: visual analog pain score at rest and during coughing; respiratory rate; arterial oxygen saturation (SaO_2); bedside spirometry (ie, FVC, FEV_1, FEV_1/FVC ratio, and peak expiratory flow rate [PEFR]); arterial blood gas measurements; and O_2 index (ie, PaO_2/fraction of inspired oxygen ratio). There were significant improvements in pain scores (at rest, $p = 0.002$; during coughing, $p = 0.001$), respiratory rate ($p <$

0.0001), FVC (p = 0.007), PEFR (p = 0.01), SaO(2) (p = 0.04), and O(2) index (p = 0.01) 30 min after the initial injection, which were sustained for the 4 days that the thoracic paravertebral infusion was in use (p < 0.05). PaCO(2) did not change significantly after the initial injection, but on day 4 it was significantly lower than the post-TPVB value (p = 0.04). One patient had an inadvertent epidural injection, and another developed transient ipsilateral Horner syndrome with sensory changes in the arm. No patient exhibited clinical signs of inadvertent intravascular injection or local anesthetic toxicity. CONCLUSION: Our results confirmed that continuous thoracic paravertebral infusion of bupivacaine is a simple and effective method of providing continuous pain relief in patients with unilateral MFR. It also produced a sustained improvement in respiratory parameters and oxygenation.

Kawamata, M., et al. "Experimental incision-induced pain in human skin: effects of systemic lidocaine on flare formation and hyperalgesia." *Pain.* 100, no. 1-2(2002): 77-89 UI 12435461.

In order to try to gain a better understanding of the mechanisms of post-operative pain, this study was designed to psychophysically determine physiological and pharmacological characteristics of experimental pain induced by a 4-mm-long incision through the skin, fascia and muscle in the volar forearm of humans. In experiment 1, the subjects (n=8) were administered lidocaine systemically (a bolus injection of 2mg/kg for a period of 5 min followed by an intravenous infusion of 2mg/kg/h for another 40 min), and then the incision was made. In experiment 2, cumulative doses of lidocaine (0.5-2mg/kg) were systemically injected in the subjects (n=8) 30 min after the incision had been made, when primary and secondary hyperalgesia had fully developed. Spontaneous pain was assessed using the visual analog scale (VAS). Primary hyperalgesia was defined as mechanical pain thresholds to von Frey hair stimuli (from 7 to 151 mN) in the injured area. The area of secondary hyperalgesia to punctate mechanical stimuli was assessed using a rigid von Frey hair (151 mN). Flare formation was assessed in the first experiment using a laser doppler imager (LDI).Pain perception was maximal when the incision was made and then rapidly disappeared within 30 min after the incision had been made. Primary hyperalgesia was apparent at 15 min after the incision had been made and remained for 2 days. The incision resulted in a relatively large area of flare formation immediately after the incision had been made. The area of flare began to shrink within 15 min and was limited to a small area around the injured area at 30 min after incision. Secondary hyperalgesia was apparent at 30 min after incision and persisted for 3h after incision and then gradually disappeared over the next 3h. In experiment 1, pre-traumatic treatment with systemic lidocaine suppressed primary hyperalgesia only during the first 1h after the incision had been made. The lidocaine suppressed the development of flare formation without affecting the pain rating when the incision was made. The development of secondary hyperalgesia continued to be suppressed after completion of the lidocaine infusion.In experiment 2, post-traumatic treatment with lidocaine temporarily suppressed primary as well as secondary hyperalgesia that had fully developed; however, the primary and secondary hyperalgesia again became apparent after completion of the lidocaine administration.These findings suggest that pre-traumatic treatment with lidocaine reduces the excessive inputs from the injured peripheral nerves, thus suppressing development of flare formation and secondary hyperalgesia through peripheral and central mechanisms, respectively. Pre-traumatic treatment with lidocaine would temporarily stabilize the sensitized nerves in the injured area, but the nerves would be sensitized after completion of the administration. Post-traumatic treatment with lidocaine reduced primary and secondary hyperalgesia that had fully developed. However, the finding that the suppressive effect of lidocaine on secondary hyperalgesia was temporary suggests that the development and maintenance of secondary hyperalgesia are caused by different mechanisms.

Kawamata, Y. T., et al. "A comparison of hyperbaric 1% and 3% solutions of small-dose lidocaine in spinal anesthesia." *Anesthesia & Analgesia.* 96, no. 3(2003): 881-4, table of contents UI 12598278.

We examined whether the concentration of hyperbaric lidocaine affected the regression of motor block when the dose of lidocaine was kept constant at 30 mg. We also examined the spread, duration, and regression of sensory block. Sixty-five patients (ASA physical status I or II), scheduled for elective perineum or lower limb surgery, were enrolled in this study. Patients received spinal anesthesia with 1 mL of 3% lidocaine or 3 mL of 1% lidocaine. Adequate level of block was obtained for surgery in 63 of 65 patients. Whereas the administration of 3 mL of hyperbaric 1% lidocaine solution produced a level of sensory block similar to that produced by the administration of 1 mL of hyperbaric 3% lidocaine solution in spinal anesthesia, the administration of 3 mL of hyperbaric 1% lidocaine solution resulted in shorter times to full motor recovery and to urination and produced less motor block compared with 1 mL of hyperbaric 3% lidocaine solution. Two patients receiving 1% lidocaine and four patients receiving 3% lidocaine required IV ephedrine because of hypotension. Our results showed the clinical advantages of hyperbaric 1% lidocaine spinal anesthesia compared with hyperbaric 3% lidocaine spinal anesthesia for surgery of short duration. IMPLICATIONS: When the dose of lidocaine was kept constant at 30 mg, hyperbaric 1% lidocaine solution resulted in shorter times for recovery from motor block and to urination than did hyperbaric 3% lidocaine solution. Levels of sensory block were similar. Therefore, the more dilute lidocaine for spinal anesthesia may be suitable for day-care surgery and short duration surgery.

Kay, G., et al. "The role of ketorolac tromethamine in a clinical care pathway for men undergoing radical retropubic prostatectomy." *Urologic Nursing.* 22, no. 6(2002): 392-3, 396-7, 426 UI 12593230.

The use of ketorolac in managing postoperative pain after a variety of surgical procedures has potential advantages over the use of narcotic analgesics alone. The purpose of this study was to determine whether the addition of ketorolac influenced the time to resumption of a full diet, hospital discharge, and postoperative complication rates, compared to a group of patients receiving only narcotic analgesics whose postoperative management was otherwise similar. The group receiving ketorolac had an earlier return to full diet than those receiving narcotics alone. Similarly, the median length of hospital stay was shorter in the ketorolac group then the group treated with narcotics alone. The inclusion of ketorolac in the postoperative pain management of patients after radical retropubic prostatectomy appears to be a safe and effective strategy.

Khaitan, E., S. Scholz, and W. O. Richards. "Laparoscopic adhesiolysis and placement of Seprafilm: a new technique and novel approach to patients with intractable abdominal pain." *Journal of Laparoendoscopic & Advanced Surgical Techniques. Part A.* 12, no. 4(2002): 241-7 UI 12269490.

Patients who suffer from chronic abdominal pain as a result of postoperative adhesion formation are challenging to treat. Many surgeons argue that operative treatment of these patients exacerbates symptoms because of the continued adhesion formation following each procedure. Seprafilm (Genzyme, Tucker, GA, USA), a bioresorbable membrane of sodium hyaluronate and carboxymethylcellulose, and laparoscopic surgery have both been shown to significantly decrease postoperative adhesion formation. Although the utility of laparoscopy is controversial in the treatment of these patients, the combination of laparoscopy and Seprafilm can provide excellent relief in this difficult patient population. We report a new technique, laparoscopic adhesiolysis and Seprafilm placement, for patients with intractable abdominal pain secondary to adhesions.

King, B. "Pain at first dressing change after toenail avulsion: the experience of nurses, patients and an observer: 1." *Journal of Wound Care.* 12, no. 1(2003): 5-10 UI 12572229.

OBJECTIVE: Ingrowing toenails are often treated surgically by nail avulsion, with paraffin tulle gauze applied to the toenail bed afterwards. In one large city's primary care trusts, community nurses reported that patients felt pain when the gauze was removed postoperatively. This study looked at patients' general pain experience, and their pain during the first dressing change after toenail avulsion. Patients' perceptions of their pain were investigated, along with nurses' experience of redressing toenail beds, their technique and their interaction with patients, especially in relation to pain prevention. METHOD: First an extensive literature review was conducted. Then a collective instrumental case study design was used. This allowed triangulation of data sources using patient and nurse interviews, and non-participant observation, from six cases recruited from the city's primary care trusts. Data were subjected to thematic content analysis, with two main categories identified. These were 'setting up of expectations' and 'a painful experience: but for whom?' RESULTS AND CONCLUSION: This study provides a unique description of the type of pain patients experience. It raises serious issues about the adequacy of nurses' management of pain, including assessment, documentation and advice on pain-relief strategies. It supports discontinuing the use of paraffin tulle gauze as the postoperative dressing, and raises ethical issues about changing treatments and lack of communication with secondary care. Finally, it identifies a gap in knowledge of the most suitable dressing product to apply immediately after surgery. A randomised controlled trial is needed to clarify these preliminary findings.

Kirsner, R. "New approaches to a timeless dilemma." *Ostomy Wound Management.* 49, no. 1(2003): 12-4 UI 12532028.

Klepstad, P., et al. "The Norwegian brief pain inventory questionnaire: translation and validation in cancer pain patients." *Journal of Pain & Symptom Management.* 24, no. 5(2002): 517-25 UI 12547051.

The European Association of Palliative Care recommends the Brief Pain Inventory questionnaire (BPI) as a pain assessment tool in clinical studies. After translation into Norwegian, we administered the BPI to 300 hospitalized cancer patients. Cronbach's alphas were computed to assess reliability, and factor analysis was utilized to ascertain construct validity. The BPI interference and pain severity scales were validated against items on pain intensity and pain influence on daily function in the European Organization for Research and Therapy of Cancer (EORTC) QLQ-C30 questionnaire. In total, 235 patients (78%) were able to complete the BPI questionnaire, but 82 (35%) of these questionnaires had one or more missing items. Cronbach's alphas were 0.87 for the pain severity and 0.92 for the interference scales. A factor analysis identified three factors; pain intensity, interference with physical function, and interference with psychological functions/sleep. These three factors explained 82% of the variance. The correlation between BPI pain severity index and the EORTC QLQ-C30 item on pain intensity was 0.70 ($P < 0.001$). The correlation between BPI interference index and the EORTC QLQ-C30 item on pain influence on daily living was 0.62 ($P < 0.001$). We conclude that BPI has satisfactory psychometric properties, but is not completed by a significant proportion of patients. Further research is needed to establish pain assessment tools for patients unable to answer a comprehensive pain questionnaire, to establish routines for analysis of missing values, and to investigate if pain interference items also reflect disease-related impairment.

Kogan, A., et al. "Evaluation of chest pain in the ED: factors affecting triage decisions." *American Journal of Emergency Medicine.* 21, no. 1(2003): 68-70 UI 12563585.

The emergency physician's (EP) fast and correct diagnosis of patients with chest pain is crucial for preventing inappropriate discharge and dire consequences. To determine which factors affect admission decisions in the ED, we studied epidemiologic characteristics of both discharged and admitted patients, and the percentage of discharged patients who returned to the ED with acute myocardial infarction. The study included 185 patients seen in the ED because of chest pain between July 1 and 31, 1997 (every third day not included). Ninety patients were admitted: 36.7% were admitted for "observation of chest pain" and 63.3% met the criteria for active coronary heart disease. A form was used to collect personal data, medical history, risk factors, clinical examination, electrocardiogram interpretation, laboratory data, and admittance decision. EPs' diagnosis of cardiac chest pain demonstrated a sensitivity of 93.4%, a specificity of 73.4%, and a positive predictive value of 63.3%. Sensitivity for diagnosing acute myocardial infarct was 100%, with no erroneous discharges. The EP's ability to integrate the medical history information, including risk factors and pain characteristics, had a marked influence on the admittance decision. Efforts to reduce missed diagnoses are warranted. Copyright 2003, Elsevier Science (USA). All rights reserved.)

Korttila, K. "Concluding remarks. C0X-2-selective inhibition: a new advance in pain management." *European Journal of Anaesthesiology - Supplement.* 25(2002): 21-3 UI 12596801.

Korttila, K. "COX-2-selective inhibition: a new advance in pain management. Chairman's introduction." *European Journal of Anaesthesiology - Supplement.* 25(2002): 1-2 UI 12449671.

Kunjur, J., P. A. Brennan, and V. Ilankovan. "The use of triamcinolone in thyrohyoid syndrome." *British Journal of Oral & Maxillofacial Surgery.* 40, no. 5(2002): 450-1 UI 12379199.

Kuster, G. M., et al. "Comparison of presentation, perception, and six-month outcome between women and men > or =75 years of age with angina pectoris." *American Journal of Cardiology.* 91, no. 4(2003): 436-9 UI 12586259.

Kvale, P. A., et al. "Lung cancer. Palliative care." *Chest.* 123, no. 1 Suppl(2003): 284S-311S UI 12527586.

The majority of patients who acquire lung cancer will have troublesome symptoms at some time during the course of their disease. Some of the symptoms are common to many types of cancers, while others are more often encountered with lung cancer than other primary sites. The most common symptoms are pain, dyspnea, and cough. This document will address the management of these symptoms, and it will also address the palliation of specific problems that are commonly seen in lung cancer: metastases to the brain, spinal cord, and bones; hemoptysis; tracheoesophageal fistula; and obstruction of the superior vena cava. [References: 216]

Kyriakides, Z. S., et al. "Usefulness of endothelin(A) receptor antagonists for the prevention of in-stent restenosis in patients with stable angina pectoris or silent myocardial ischemia." *American Journal of Cardiology.* 91, no. 4(2003): 476-9 UI 12586272.

Lalak, N. J., et al. "The Dornier Compact Delta lithotripter: the first 150 ureteral calculi." *Journal of Endourology.* 16, no. 9(2002): 645-8 UI 12490016.

BACKGROUND AND PURPOSE: Shockwave lithotripsy (SWL) is the least invasive treatment for ureteral calculi and is the best accepted by patients and clinicians. This prospective study was performed to evaluate the results of SWL for all ureteral calculi. PATIENTS AND METHODS: Between April 1999 and May 2000, there were 150 SWL treatments for ureteral calculi at our center. All patients who completed treatment (24 females, 126 males with an average age of 54 +/- 14 years) were entered in the study and were assessed at 1 and 3 months with a plain film of the kidneys, ureters, and bladder and an ultrasound scan or intravenous urogram if clinically indicated. The outcome has been analyzed according to stone size, location (lower ureter [LU], midureter [MU], and upper ureter [UU], number of treatments per stone, number of shocks per stone, and stone-free rate (SFR). The analgesia requirements during each treatment and complications have also been analyzed. RESULTS: The SFR in the UU was 77% at 1 month and 85% at 3 months. The SFR in the MU was 74% at both 1 and 3 months. The SFR in the LU was 65% at 1 month and 74% at 3 months. Overall, the SFR for all calculi was 72% at 1 month and 79% at 3 months. Ureteroscopic extraction was necessary in 19% of the patients and conservative management for the remaining asymptomatic fragments, which were 2 mm or smaller. All of these asymptomatic fragments were seen to have passed spontaneously on follow-up imaging studies. Ureteral stents were not placed routinely prior to SWL, but there were 32 calculi (21%) for which stents had been placed prior to SWL: 29 (19%) in the UU, 3 (2%) in the MU, and 0 in LU. There was no difference in the SFR or ureteroscopy rate in UU calculi treated with or without stents and no difference in the number of treatments needed to achieve these SFRs. The efficiency quotient for the UU was 55%, 45% for the MU, and 45% for the LU. Oral analgesia was given routinely; however, additional intravenous analgesia was necessary in 24% of treatments. No serious complications were seen. CONCLUSIONS: The Dornier Compact Delta lithotripter provides an effective noninvasive treatment for ureteral calculi that is achieved with minimal anesthesia and a low complication rate. Placement of ureteral stents prior to SWL does not enhance the SFR or obviate intervention if SWL fails. We recommend a low threshold for ureteroscopic treatment if significant progress is not made in fragmenting the stone with SWL.

Lane, P., et al. "A pain assessment tool for people with advanced Alzheimer's and other progressive dementias." *Home Healthcare Nurse.* 21, no. 1(2003): 32-7 UI 12544460.

Appropriate pain management can only be achieved through accurate pain assessment that is individualized, ongoing, and well documented. Assessment tools must focus on the patient as the authority on pain's existence and severity; however, self-reports are not feasible when patients lose their ability to verbally communicate. This article describes a scientifically proven pain assessment tool that can be used for patients with advanced dementia and Alzheimer's Disease.

Laprade, J. A., and E. G. Culham. "A self-administered pain severity scale for patellofemoral pain syndrome." *Clinical Rehabilitation.* 16, no. 7(2002): 780-8 UI 12428827.

OBJECTIVE: To develop a scale for estimating the severity of patellofemoral pain syndrome (PFPS) and to determine its reliability and validity. DESIGN: The PFPS Severity Scale (PSS) was developed following a literature search, input from clinicians, and pilot testing in people with PFPS. The final version of the instrument encompasses 10 statements regarding PFPS pain in a visual analogue format. Reliability and validity of the new scale were determined in a PFPS population. SETTING: All testing was performed at the Canadian Forces Base Kingston,

Physiotherapy Department. SUBJECTS: Twenty-nine military subjects (7 female) between the ages of 20 and 48 (32 years +/- 8.9) with subjective and objective findings consistent with PFPS were recruited. Twenty-four of the participants (6 female, 31.8 years +/- 9.4) participated in the reliability phase of the study. METHODS: Reliability of the PSS was determined by comparing the scores obtained on two test days (24 hours apart). Convergent validity of the PSS was determined by comparing data from the PSS with two established knee scales: the WOMAC (Western Ontario and McMaster Universities) Osteoarthritis Index and the Hughston Foundation subjective knee scale. RESULTS: Test-retest reliability was excellent (Spearman's rho = 0.95, $p < 0.0001$). The correlations between the PSS and the WOMAC and Hughston scales were strong (rho = 0.72 and 0.83, $p < 0.001$ respectively). CONCLUSIONS: The PSS is reliable and has demonstrated convergent validity making it a useful tool for monitoring rehabilitative or surgical outcomes in clients with PFPS.

Lapsley, J. N. "The clergy as advocates for the severely demented." *The Journal of Pastoral Care & Counseling: JPCC.* 56, no. 4(2002): 317-25 UI 12564392.

The author sets forth the argument that pastoral caregivers ought to consider expanding their traditional role of ministering to dementia patients by pressing the issue of whether appropriate medication might significantly lessen the suffering of these persons. After discussing and documenting the current understanding regarding the nature of pain, the author outlines several advocacy, ethical, and procedural issues that could be included in providing pastoral care to this population, at the same time not miminizing more traditional faith-based activities.

Larsen, K., F. Weidick, and C. Leboeuf-Yde. "Can passive prone extensions of the back prevent back problems? A randomized, controlled intervention trial of 314 military conscripts." *Spine.* 27, no. 24(2002): 2747-52 UI 12486341.

SUMMARY OF BACKGROUND DATA: Back schools may be effective in treating back problems, but there is conflicting evidence of the effect on prevention. OBJECTIVES: To investigate if passive prone extensions of the back can prevent back problems. STUDY DESIGN: Prospective, randomized controlled intervention trial. METHODS: In total, 314 male conscripts were randomized into two groups. After randomization, 65 conscripts dropped out for administrative reasons, leaving 249 conscripts to participate fully in the study. Data were collected through questionnaires at the start of military duty and after 10 months. All conscripts in the intervention group had one 40-minute theoretical lesson on back problems and ergonomics and had to perform passive prone extensions of the back daily during the rest of their military duty. The control group had no intervention. Outcome variables were as follows: 1) number of persons with self-reported back problems during the last 3 weeks; 2) number of persons with self-reported back problems during the last year; and 3) number of persons who reported having consulted the regiment medical physician with back problems during their military service. RESULTS: In an intention-to-treat analysis, significantly fewer persons in the intervention group versus those in the control group reported back problems during the last year (33% versus 51%), and the number needed to prevent was 6. Significantly fewer persons in the intervention group versus those in the control group consulted the regiment infirmary (9% versus 25%), and the number needed to prevent was 6. CONCLUSION: It may be possible to reduce the prevalence rate of back problems and the use of health care services during military service, at a low cost, using passive prone extensions of the back motivated by a back school approach, including the theory of the disc as a pain generator and ergonomic instructions.

Lenderink, T., et al. "Elevated troponin T and C-reactive protein predict impaired outcome for 4 years in patients with refractory unstable angina, and troponin T

predicts benefit of treatment with abciximab in combination with PTCA.[comment]." *European Heart Journal.* 24, no. 1(2003): 77-85 UI 12559939.

AIMS: Treatment with the glycoprotein IIb/IIIa receptor antagonist abciximab before and during coronary intervention in refractory unstable angina improves early outcome. We collected 4-year follow-up data to assess whether this benefit is sustained. Additionally, we investigated the predictive value of baseline troponin T and CRP for long-term cardiovascular events. METHODS AND RESULTS: Of 1265 patients enrolled in the CAPTURE trial follow-up was available in 94% of the patients alive after 6 months (median 48 months). Survival was similar in both groups. Both elevated troponin T and CRP were associated with impaired outcome, independently of other established risk factors, but with a different time course. Elevated troponin was associated with increased procedure related risk, and elevated CRP with increased risk for subsequent events. Lower rates of the composite end-point of death or myocardial infarction with abciximab vs. placebo were sustained during long-term follow up: 15.7% vs 17.2% at 4 years (P=ns), particularly in patients with elevated troponin T: 16.9% with abciximab vs 28.4% with placebo: P=0.015. Elevated CRP was not associated with specific benefit of abciximab. CONCLUSION: Troponin T as a marker of thrombosis and CRP as a marker of inflammation are independent predictors of impaired outcome at 4 years follow-up. The initial benefit from abciximab with regard to death and myocardial infarction was preserved at 4 years. No specific benefit with abciximab was observed for patients with elevated CRP, suggesting that a chronic inflammatory process is not affected by abciximab. In contrast the benefit of treatment in patients with elevated troponin T implies that the acute thrombotic process in refractory unstable angina is treated effectively.

Lew, M. F. "Review of the FDA-approved uses of botulinum toxins, including data suggesting efficacy in pain reduction." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S142-6 UI 12569961.

Botulinum toxin has dramatically improved the treatment of a variety of neurologic disorders. Two botulinum toxin preparations are commercially available in the United States: type A (Botox) and type B (Myobloc). Current indications approved by the United States Food and Drug Administration include cervical dystonia, strabismus, blepharospasm, hemifacial spasm, and glabellar wrinkles for Botox, and cervical dystonia for Myobloc. Botulinum toxin inhibits release of acetylcholine from the neuromuscular junction, resulting in a localized paralysis when minute doses are injected. This mechanism enables botulinum toxin to alleviate symptoms of focal dystonias (which are characterized by excessive muscle contraction), and it may also, along with other theoretical mechanisms, be responsible for pain relief. Studies conducted in patients with cervical dystonia have shown that botulinum toxin effectively reduces pain associated with this disorder, suggesting that this agent may be effective in alleviating other painful syndromes. [References: 37]

Li, S. F., and P. W. Greenwald. "How distracting is distracting pain?" *American Journal of Emergency Medicine.* 21, no. 1(2003): 43-4 UI 12563579.

The study was to determine the effect of preexisting pain on the perception of a painful stimulus. We conducted a cross-section study at an urban ED using convenience sampling. Adult patients who had a 20-g IV catheter placed as part of their ED care were eligible for the study. Patients were excluded for the following reasons: more than one IV attempt, altered mental status, visual impairment, intoxication, or a physical abnormality at the IV site. Patients were asked to indicate on a 10-cm visual analog scale (VAS) the amount of pain they had at baseline immediately before IV placement. They were then asked to indicate on a separate VAS the amount of pain caused by the IV placement. Correlation between baseline pain and pain of the IV was assessed using Pearson's rho. One hundred patients

were enrolled in the study. The pain of IV placement did not differ significantly by gender, race, who placed the IV, or the location of the IV. The correlation between baseline pain and pain of the IV placement was poor (rho =.14, confidence interval:-.06-.33). The response to a standardized painful stimulus among ED patients does not correlate highly with the severity of preexisting pain. Copyright 2003, Elsevier Science (USA). All rights reserved.)

Link, T. M., et al. "Osteoarthritis: MR imaging findings in different stages of disease and correlation with clinical findings." *Radiology.* 226, no. 2(2003): 373-81 UI 12563128.

PURPOSE: To determine whether knee pain, stiffness, and limited function in patients with different stages of osteoarthritis correlate with the degree of disease assessed on magnetic resonance (MR) images and radiographs. MATERIALS AND METHODS: Radiographs in 50 patients with varying degrees of osteoarthritis of the knee were assessed by using the the Western Ontario and McMaster University (WOMAC) osteoarthritis index and the Kellgren-Lawrence (KL) scale. MR images were obtained and analyzed by two readers for cartilage lesions, bone marrow edema pattern, and ligamentous and meniscal lesions. RESULTS: Thirteen of 16 knees with a KL score of 4 showed full-thickness cartilage lesions and bone marrow edema pattern. Cruciate ligament tears were found in five of 12 knees with a KL score of 3 and in nine of 16 knees with a KL score of 4. While the KL score correlated significantly (P <.05) with the grade of cartilage lesions, and a substantially higher percentage of lesions with higher KL scores were found on MR images, the correlations between MR imaging findings and KL score versus clinical findings were not significant (P >.05). Significant differences between WOMAC scores were found only for the grades of cartilage lesions (P <.05). CONCLUSION: Cartilage lesions, bone marrow edema pattern, and meniscal and ligamentous lesions were frequently demonstrated on MR images in patients with advanced osteoarthritis. Clinical findings showed no significant correlations with KL score and extent of findings at MR imaging.

Lippert, J. A., and J. K. McGraw. "Spine interventions." *Seminars in Roentgenology.* 37, no. 4(2002): 266-81 UI 12455125.

Luginbuhl, M., et al. "Modulation of remifentanil-induced analgesia, hyperalgesia, and tolerance by small-dose ketamine in humans." *Anesthesia & Analgesia.* 96, no. 3(2003): 726-32, table of contents UI 12598253.

Adding a small dose of ketamine to opioids may increase the analgesic effect and prevent opioid-induced hyperalgesia and acute tolerance to opioids. In this randomized, double-blinded, placebo-controlled crossover study, we investigated the effect of remifentanil combined with small concentrations of ketamine on different experimental pain models. Pain detection thresholds to single and repeated IM electrical stimulation and to repeated transcutaneous electrical stimulation, pressure pain tolerance threshold, and sedative, respiratory, and cardiovascular side effects were assessed in 14 healthy volunteers. Saline, remifentanil alone, and remifentanil combined with ketamine at target plasma concentrations of 50 or 100 ng/mL were administered in four study sessions. The ketamine infusion was started after baseline testing at a constant target concentration. Remifentanil was started after testing with ketamine alone at an initial target concentration of 1 ng/mL and then increased to 2 ng/mL and decreased to 1 ng/mL. The last test series were started 10 min after discontinuation of remifentanil. Acute remifentanil-induced hyperalgesia and tolerance were detected only by the pressure pain test and were not suppressed by ketamine. Remifentanil alone induced significant analgesia with all pain tests. Ketamine further increased the remifentanil effect only on IM electrical pain. Remifentanil at a 2 ng/mL target concentration induced a slight respiratory

depression that was antagonized by ketamine. We conclude that ketamine effects on opioid analgesia are pain-modality specific. IMPLICATIONS: Coadministration of ketamine and morphine for pain relief is still controversial. Our experimental pain study with volunteers showed that ketamine enhances opioid analgesia without increasing sedation and reduces respiratory depression. Opioid-induced hyperalgesia and tolerance were not affected by ketamine and depended on the type of nociceptive stimulus. This may explain the conflicting results on opioid tolerance in previous studies.

Lutz, C., G. E. Lutz, and P. M. Cooke. "Treatment of chronic lumbar diskogenic pain with intradiskal electrothermal therapy: a prospective outcome study." *Archives of Physical Medicine & Rehabilitation.* 84, no. 1(2003): 23-8 UI 12589616.

OBJECTIVE: To determine the clinical efficacy of intradiskal electrothermal annuloplasty in treating patients with chronic constant lumbar diskogenic pain who have not responded to at least 6 months of aggressive nonoperative care. DESIGN: Prospective case series. SETTING: Academic-affiliated private physiatry practice. PARTICIPANTS: Thirty-three patients with chronic constant lumbar diskogenic pain of more than 6 months in duration diagnosed with history and physical examination, with concordant pain on provocative pressure-controlled lumbar diskography, and with symptomatic annular tears and/or protrusions less than 5mm, who did not respond to aggressive nonoperative care. INTERVENTION: Intradiskal electrothermal annuloplasty. MAIN OUTCOME MEASURES: Visual analog scale (VAS) pain scores for the back and for the lower extremity, the Roland-Morris Disability Questionnaire (RMDQ), and the North American Spine Society Patient Satisfaction Index. RESULTS: A total of 33 patients, with mean age of 40 years and a mean duration of symptoms of 46 months, were observed with a mean follow-up of 15 months. Relief of pain and improvement in physical function were associated with a mean change in the VAS score of 3.9 (P<.001), a mean change in the lower-extremity VAS score of 3.7 (P<.001), and a mean change in the RMDQ of 7.3 (P<.001). For patient satisfaction, 75.7% reported that they would undergo the same procedure for the same outcome. Complete pain relief was achieved in 24% of the patients, and partial pain relief in 46% of the patients. CONCLUSIONS: Intradiskal electrothermal annuloplasty offers a safe, minimally invasive treatment option for carefully selected patients with chronic lumbar diskogenic pain who have not responded to aggressive nonoperative care.

Mader, R. "Clinical manifestations of diffuse idiopathic skeletal hyperostosis of the cervical spine." *Seminars in Arthritis & Rheumatism.* 32, no. 2(2002): 130-5 UI 12430101.

OBJECTIVES: To describe the clinical manifestations and the complications of cervical spine (C-spine) involvement in diffuse idiopathic skeletal hyperostosis (DISH). METHODS: Two patients, who presented with dysphagia resulting from large anterior osteophytes of the C-spine, were diagnosed as having DISH. A Medline search from 1964 to present, using the terms "diffuse idiopathic skeletal hyperostosis" and "cervical spine," identified several clinical manifestations associated with DISH. RESULTS: Two groups of conditions associated with DISH were found. 1. Spontaneous complications such as: dysphagia, being the commonest, dyspnea, stridor, myelopathy associated with ossification of the posterior longitudinal ligament (OPLL) or with atlanto-axial pseudoarthrosis or subluxation. Other rare events were aspiration pneumonia, sleep apnea and thoracic outlet syndrome. 2. Provoked complications such as endoscopic and intubation difficulties and fractures of the C-spine with frequent transverse shift of the fractured segment and resultant myelopathy. CONCLUSIONS: C-spine involvement in DISH is a recognized cause of various clinical manifestations involving the pharynx, larynx

and the esophagus. Prior knowledge of the existence of cervical DISH should alert the clinicians for possible complications, at times severe, during invasive procedures in the neck region and as a consequence of trauma. Copyright 2002, Elsevier Science (USA). All rights reserved.

Maihofner, C., et al. "Temporo-spatial analysis of cortical activation by phasic innocuous and noxious cold stimuli--a magnetoencephalographic study." *Pain.* 100, no. 3(2002): 281-90 UI 12467999.

Clinical findings and recent non-invasive functional imaging studies pinpoint the insular cortex as the crucial brain area involved in cold sensation. By contrast, the role of primary (SI) and secondary (SII) somatosensory cortices in central processing of cold is controversial. So far, temporal activation patterns of cortical areas involved in cold processing have not been examined. Using magnetoencephalography, we studied, in seven healthy subjects, the temporo-spatial dynamics of brain processes evoked by innocuous and noxious cold stimulation as compared to tactile stimuli. For this purpose, a newly designed and magnetically silent cold-stimulator was employed. In separate runs, cold and painful cold stimuli were delivered to the dorsum of the right hand. Tactile afferents were stimulated by pneumatic tactile stimulation.Following innocuous cold stimulation (DeltaT=5+/-0.3 degrees C in 50+/-2ms), magnetic source imaging revealed an exclusive activation of the contra- and ipsilateral posterior insular cortex. The mean peak latencies were 194.3+/-38.1 and 241.0+/-31.7ms for the response in the ipsi- and contralateral insular cortex, respectively. Based on the measurement of onset latencies, the estimated conduction velocity of peripheral nerve fibres mediating cold fell in the range of Adelta-fibres (7.4+/-0.8 m/s). Noxious cold stimulation (DeltaT=35+/-5 degrees C in 70+/-12ms) initially activated the contra- and ipsilateral insular cortices in the same latency ranges as innocuous cold stimuli. Additionally, we found an activation of the contra- and ipsilateral SII areas (peak latencies 304+/-22.7 and 310.1+/-19.4ms, respectively) and a variable activation of the cingulate cortex. Notably, neither cold- nor painful cold stimulation produced an activation of SI. By contrast, the evoked cortical responses following tactile stimulation could be located to the contralateral SI cortex and bilateral SII. In conclusion, this study strongly corroborates the posterior insular cortex as the primary somatosensory area for cortical processing of cold sensation. Furthermore, it supports the role of SII and the cingulate cortex in mediating freeze-pain. Therefore, these results suggest different processing of cold, freeze-pain and touch in the human brain.

Manfredi, P. L., et al. "Pain assessment in elderly patients with severe dementia." *Journal of Pain & Symptom Management.* 25, no. 1(2003): 48-52 UI 12565188.

The purpose of this study was to assess the reliability and validity of facial expressions as pain indicators in patients with severe dementia. Based on interviews with patients who could report pain, we defined characteristics of decubitus ulcers associated with reports of pain during dressing changes. We then evaluated 9 patients who had ulcers with these characteristics but were unable to communicate verbally because of severe dementia. We videotaped their facial expressions before and during their decubitus ulcer dressing change. We showed the videotape segments, in random order, to 8 medical students and 10 nurses. The 18 viewers were asked to infer the presence or absence of pain based on their observations of the patients' facial expressions and vocalizations. The dressing change of decubitus ulcers extending beyond the subcutaneous tissue, covering an area of at least 9 cm(2), and with a moist surface, was always reported as painful by study patients able to report (95% confidence interval of 69-100%). The intraclass correlation coefficient for the answers of the 18 viewers evaluating each videotape segment for the presence of pain was 0.64. Sensitivity, specificity, and positive and negative

predictive values of viewers' ratings of facial expressions and vocalizations as a measure of the presence of pain were: 0.70, 0.83, 0.90, and 0.81. The intraclass correlation coefficient for the answers rating pain intensity was only 0.10, indicating only slight agreement beyond chance. Assuming dressing changes of ulcers reported as painful by communicative patients are also painful in non-verbal severely demented patients, clinician observations of facial expressions and vocalizations are accurate means for assessing the presence of pain, but not its intensity, in patients unable to communicate verbally because of advanced dementia.

Mao, J. "Opioid-induced abnormal pain sensitivity: implications in clinical opioid therapy." *Pain.* 100, no. 3(2002): 213-7 UI 12467992.

Matsumoto, A. K., et al. "A randomized, controlled, clinical trial of etoricoxib in the treatment of rheumatoid arthritis.[comment]." *Journal of Rheumatology.* 29, no. 8(2002): 1623-30 UI 12180720.

OBJECTIVE: To evaluate the efficacy and tolerability of the highly selective cyclooxygenase-2 (COX-2) inhibitor etoricoxib for the treatment of rheumatoid arthritis (RA). METHODS: A double blind, randomized, placebo and active comparator controlled, 12 week study conducted at 88 US sites. Eligible patients were chronic nonsteroidal antiinflammatory drug (NSAID) users with clinical worsening of RA upon withdrawal of prestudy NSAID. Patients received either placebo, etoricoxib 90 mg once daily, or naproxen 500 mg twice daily (2:2:1 allocation ratio). Primary efficacy measures: patient and investigator global assessments of disease activity and direct assessment of arthritis by counts of tender and swollen joints. Key secondary measures: patient global assessment of pain, the Stanford Health Assessment Questionnaire, and the percentage of patients both completing the study and meeting the ACR20 criteria. Tolerability was assessed by tabulation of adverse events and routine laboratory evaluations. RESULTS: In all, 816 patients were randomized (placebo = 323, etoricoxib = 323, naproxen = 170), and 448 completed 12 weeks of treatment (placebo = 122, etoricoxib = 230, naproxen = 96). Compared with patients receiving placebo, patients receiving etoricoxib and naproxen showed significant improvements in all efficacy endpoints ($p < 0.01$). Compared with patients receiving naproxen, patients receiving etoricoxib demonstrated significant improvements ($p < 0.05$) on all primary endpoints and most other endpoints including ACR20 criteria. The percentage of patients who achieved an ACR20 response and who completed the study was 21%, 53%, and 39% in the placebo, etoricoxib and naproxen groups, respectively. Etoricoxib and naproxen were both generally well tolerated. CONCLUSION: In this study, etoricoxib 90 mg once daily was more effective than either placebo or naproxen 500 mg twice daily for treating patients with RA over 12 weeks. Etoricoxib 90 mg was generally well tolerated in patients with RA.

McCleane, G. J. "A phase 1 study of the cholecystokinin (CCK) B antagonist L-365,260 in human subjects taking morphine for intractable non-cancer pain." *Neuroscience Letters.* 332, no. 3(2002): 210-2 UI 12399016.

To investigate the safety and tolerability of L-365,260 in human subjects taking morphine for intractable pain. An open label study of nine adult subjects. Two doses of L-365,260 were administered to all subjects separated by a 4 h interval (three received 10 mg, three 30 mg and three 60 mg). Haemodynamic and respiratory variables were recorded from immediately prior to first drug administration to T + 600 min. In addition, continuous electrocardiogram (ECG) monitoring and serial 12 lead ECGs were recorded along with pain and side effect measurements. No major side effects were observed. L-365,260 was well tolerated. No abnormalities in blood pressure, heart rate, respiratory rate or ECG measurements were recorded. Minor side effects were observed. L-365,260 can be safely administered at the doses

investigated to human subjects receiving morphine for intractable pain. Copyright 2002 Elsevier Science Ireland Ltd.

McConnell, J. "The physical therapist's approach to patellofemoral disorders." *Clinics in Sports Medicine.* 21, no. 3(2002): 363-87 UI 12365233.

Management of patellofemoral pain is no longer a conundrum if the therapist can determine the underlying causative factors and address those factors in treatment. It is imperative that the patient's symptoms are significantly reduced. This often is achieved by taping the patella, which not only decreases the pain but also promotes an earlier activation of the VMO and increases quadriceps torque. Management needs to include specific VMO training, gluteal-control work, stretching tight lateral structures, and appropriate advice regarding the foot, whether it is orthotics, training, or taping. [References: 60]

McNamara, M. E., et al. "The effects of back massage before diagnostic cardiac catheterization." *Alternative Therapies in Health & Medicine.* 9, no. 1(2003): 50-7 UI 12564351.

CONTEXT: Admission to the hospital for a diagnostic cardiac catheterization can be perceived as a threat to one's health status. Autonomic nervous system arousal, particularly the sympathetic division, can elicit negative physiological and psychological human responses as a reaction to this threat. OBJECTIVE: The purpose of this study was to measure the effects of a 20-minute back massage on the physiological and psychological human responses of patients admitted for a diagnostic cardiac catheterization. DESIGN: A randomized clinical trial design was used. Data were compared in a repeated measures design before massage (T1), immediately following the back massage or standard care (T2), and 10 minutes later (T3). SETTING: A large urban academic medical center. PARTICIPANTS: Forty-six subjects admitted from home for a diagnostic cardiac catheterization. MAIN OUTCOME MEASURES: Heart rate, heart rate variability, blood pressure, respiration, peripheral skin temperature, pain perception, and psychological state. INTERVENTION: A 20-minute back massage. RESULTS: There was a significant difference between subject effect for group, with a reduction in systolic blood pressure in the treatment group ($F = 8.6$, $P < .05$). In addition, main effects were noted for time for diastolic blood pressure ($F = 5.44$; $P < .006$), respiration ($F = 10.6$; $P < .005$), total Profile of Mood States score ($F = 5.9$; $P < .001$) and pain perception ($F = 4.09$; $P < .04$) in both groups. CONCLUSIONS: A 20-minute back massage appeared to reduce systolic blood pressure in patients awaiting a diagnostic cardiac catheterization, while preparatory time in the cardiac catheterization laboratory appeared to reduce diastolic blood pressure, respiration, perceived psychological distress, and pain.

Melegati, G., et al. "The influence of local steroid injections, body weight and the length of symptoms in the treatment of painful subcalcaneal spurs with extracorporeal shock wave therapy." *Clinical Rehabilitation.* 16, no. 7(2002): 789-94 UI 12428828.

OBJECTIVE: To evaluate the effectiveness of extracorporeal shock wave therapy (ESWT) for the treatment of painful subcalcaneal spurs and evaluate whether local steroid injections, body weight and the length of symptoms can affect the clinical results. DESIGN: Subjects were selected through clinical examination and heel radiograms according to diagnosis of painful subcalcaneal spurs. SUBJECTS: Sixty-four subjects were divided into two groups of treatment depending on their past history of previous local steroid injections. INTERVENTIONS: Each subject received a three-session ESWT (performed weekly). A rehabilitative programme was instituted, consisting of self-assisted plantar fascia and plantar flexors stretching exercises. MAIN OUTCOME MEASURES: The Mayo Clinical Scoring System (MCSS) was utilized

to evaluate each subject before the treatment and at two- and ten-month follow-ups. In addition, standard radiograms were done both before the treatment and at the ten-month follow-up. RESULTS: Patients with no past treatment using steroids did not show any statistically significant improvement of the MCSS at the two-month follow-up. The statistical significance was obtained at the ten-month follow-up. Patients with past treatment using steroids did not show any statistically significant improvement of the MCSS at either follow-up. At the radiogram check, none of the subjects showed any modification of the heel spurs. CONCLUSIONS: According to the results of the present study ESWT should be considered as an effective treatment for painful subcalcaneal spurs. Previous local steroid injections may negatively affect the result of ESWT.

Mildh, L. H., A. Piilonen, and O. A. Kirvela. "Supplemental oxygen is not required in trauma patients treated with IV opiates." *American Journal of Emergency Medicine.* 21, no. 1(2003): 35-8 UI 12563577.

The risk of respiratory depression can prevent the proper use of opioids in trauma patients and lead to use of supplemental oxygen. However, high FiO(2) might contribute to atelectasis formation and consequently to relative hypoxia. Supplemental oxygen also can cause a risk of fire. In a randomized, controlled study we evaluated the need and effects of supplemental oxygen in 13 patients with extremity trauma who were treated pain-free with an intravenous opioid, oxycodone (dose range 6.75-13.6 mg). After opioid injection, 7 patients received 40% supplemental oxygen and 6 were breathing room air. Pulse oxygen saturation (SpO(2)), arterial blood gases, and hemodynamic parameters were monitored for 30 minutes. Atelectasis formation was evaluated with a computed tomography scan. No hypoxia, hypoventilation, or significant atelectasis formation was detected in any of the patients. Accordingly, routinely given supplemental oxygen was not considered necessary in these patients because no complications were seen. Copyright 2003, Elsevier Science (USA). All rights reserved.)

Miura, H., et al. "Morphine for the management of pain in lung cancer." *Nippon Rinsho - Japanese Journal of Clinical Medicine.* 60, no. Suppl 5(2002): 676-80 UI 12101762.

Moore, J., S. Ziebland, and S. Kennedy. ""People sometimes react funny if they're not told enough": women's views about the risks of diagnostic laparoscopy." *Health Expectations.* 5, no. 4(2002): 302-9 UI 12460219.

OBJECTIVES: To explore women's views about the risks and benefits of diagnostic laparoscopy in the investigation of chronic pelvic pain, including how much information it is thought appropriate to give about three specific risks: death, major complications and the chance that the procedure would have an inconclusive result. DESIGN: A qualitative analysis of semi-structured, audio-taped interviews with 20 women about their experiences of undergoing a diagnostic laparoscopy in a day surgery unit. Interviews were conducted 3-6 months after the procedure. RESULTS: All the women who were interviewed were aware that diagnostic laparoscopy carried risks, including the small risk of death associated with general anaesthesia. One-third of respondents said that they had initially been reluctant to discuss the risks of the procedure in general terms. However, when specific examples of complications and risks were introduced all but one of the respondents reported that they would have liked to discuss these at the time that the decision to have the operation was made. Women maintained that the information was needed to make an informed decision about whether to have the operation, to help them understand and cope should things go wrong and in order to make appropriate plans to cover contingencies. Most were surprised to hear that the procedure is frequently inconclusive and thought that this information should be made clear to women

contemplating a laparoscopy. CONCLUSIONS: Women undergoing diagnostic laparoscopy for the investigation of chronic pelvic pain wish to be given full and accurate information about complication rates such as bowel perforation, what to expect during their recovery, and the chances of finding a cause for their pain. Although they may not want to dwell on the risk of death, they do need to be informed about the specific risks associated with the procedure in order to make a balanced decision.

Moseley, L. "Combined physiotherapy and education is efficacious for chronic low back pain." *Australian Journal of Physiotherapy.* 48, no. 4(2002): 297-302 UI 12443524.

Manual therapy, exercise and education target distinct aspects of chronic low back pain and probably have distinct effects. This study aimed to determine the efficacy of a combined physiotherapy treatment that comprised all of these strategies. By concealed randomisation, 57 chronic low back pain patients were allocated to either the four-week physiotherapy program or management as directed by their general practitioners. The dependent variables of interest were pain and disability. Assessors were blind to treatment group. Outcome data from 49 subjects (86%) showed a significant treatment effect. The physiotherapy program reduced pain and disability by a mean of 1.5/10 points on a numerical rating scale (95% CI 0.7 to 2.3) and 3.9 points on the 18-point Roland Morris Disability Questionnaire (95% CI 2 to 5.8), respectively. The number needed to treat in order to gain a clinically meaningful change was 3 (95% CI 3 to 8) for pain, and 2 (95% CI 2 to 5) for disability. A treatment effect was maintained at one-year follow-up. The findings support the efficacy of combined physiotherapy treatment in producing symptomatic and functional change in moderately disabled chronic low back pain patients.

Murphy, B., N. Dawson, and R. J. Irwin. "Intramuscular sensation in conscious human subjects: a qualitative and quantitative study utilizing signal detection theory methodology." *Somatosensory & Motor Research.* 19, no. 3(2002): 181-90 UI 12396574.

To investigate whether human subjects could consciously perceive different levels of intramuscular sensation, EMG needle electrodes were inserted into the forearm extensor musculature. Qualitative descriptions of the types of sensations evoked at various current intensities were recorded. A series of preliminary experiments was performed in order to determine the optimum waveform, current intensity, duration and separation between adjacent current pairs that could reliably be discriminated by conscious human subjects. The methodology of signal detection theory was utilized to obtain the discrimination measure, d' (d prime). Values of d' were obtained for sequential blocks of trials consisting of randomly delivered blocks of 50 "strong" and 50 "weak" stimuli. The ability to discriminate both noxious and non-noxious stimuli was determined using d'. It was demonstrated that human subjects are able to qualitatively describe non-nociceptive sensations elicited by low levels of intramuscular stimulation. Subjects were able to reliably discriminate pairs of electrical stimuli separated in intensity by 0.4 dB over four sequential blocks of trials on the same day and on different days. This work demonstrates that signal detection theory methods can reliably measure sensory discrimination in skeletal muscle, for both noxious and non-noxious levels of electrical stimulation. A protocol is proposed for appropriate future use of this methodology to investigate alterations in muscle sensation following experimental interventions.

Nagelvoort, R. W., M. Kon, and A. H. Schuurman. "Proximal row carpectomy: a worthwhile salvage procedure." *Scandinavian Journal of Plastic & Reconstructive Surgery & Hand Surgery.* 36, no. 5(2002): 289-99 UI 12477088.

After proximal row carpectomy 11 patients were evaluated in the six ensuing years for pain relief, satisfaction, ranges of movement, grip and precision grip strength, and radiographic picture. The median follow-up period was 3.1 years (range 4 months to 6 years). They were operated on for scaphoid non-union with radiocarpal arthritis, late stage Kienbock's disease, chronic scapholunate dissociation and scapholunate advanced collapse wrist deformity. The mean disabilities of the arm, shoulder and hand (DASH) scoring list, which indicates the patient's degree of disability 28% (range 2%-64%) of maximum disability for the function and symptom score. Flexion, extension, and radial and ulnar deviation of the wrist improved to 47% (range 21%-76%), 67% (range 41%-81%), 39% (range 25%-55%), and 81% (range 44%-90%) of the opposite wrist. Mean grip strength, 70% (range 22%-117%) of the opposite site, while the three precision grips improved between 72% and 79%. A review of previous studies of proximal row carpectomy showed results comparable with those of our study. Compared with other treatments, it is a dependable, relatively-simple procedure that gives reliable relief of pain, preserves functional ranges of movement and grip strength, and allows most patients to return to work.

Naslund, J., et al. "Sensory stimulation (acupuncture) for the treatment of idiopathic anterior knee pain." *Journal of Rehabilitation Medicine.* 34, no. 5(2002): 231-8 UI 12392239.

A randomized controlled study was conducted to evaluate the effect of acupuncture treatment in idiopathic anterior knee pain, a pain syndrome without known aetiology. Fifty-eight patients, clinically and radiologically examined, were randomly assigned to either deep or minimal superficial acupuncture treatment. The patients were treated twice weekly for a total of 15 treatments. The main outcome measurements were one leg vertical jump, functional score, daily VAS recording and skin temperature. Fifty-seven patients completed the study. Pain measurements on VAS decreased significantly within both groups; in the deep acupuncture group from 25 before treatments to 10 afterwards, and in the superficial (placebo) acupuncture group from 30 to 10. There was no significant difference between the groups. The improvement on the VAS recordings remained significant even after 3 and 6 months. Even though the pain decreased after sensory stimulation, neither the ability to jump on one leg, the functional score nor the skin temperature changed. This study shows that patients with idiopathic anterior knee pain benefit from both electroacupuncture treatment and subcutaneous needling. The pain-relieving effect remains for at least 6 months. Central pain inhibition, caused by either afferent stimulation or by non-specific therapeutic (placebo) effects, is a plausible explanation behind the treatment effects.

Newberg, A. H., and J. S. Newman. "Imaging the painful hip." *Clinical Orthopaedics & Related Research.*, no. 406(2003): 19-28 UI 12578996.

With the advent of magnetic resonance imaging and, subsequently, magnetic resonance arthrography, the imaging algorithm for hip pain has evolved considerably. Magnetic resonance imaging has supplanted bone scintigraphy as the first line imaging test after conventional radiographs in the setting of suspected occult fracture, transient marrow edema, and osteonecrosis. Computed tomography scanning and magnetic resonance imaging are invaluable for the evaluation of monarticular arthropathies such as pigmented villonodular synovitis and synovial osteochondromatosis. By combining conventional magnetic resonance imaging with capsular distention afforded by arthrography, magnetic resonance arthrography has become the imaging examination of choice for disorders of the acetabular labrum and for the evaluation of articular cartilage at the hip. [References: 18]

Nicassio, P. M., et al. "The contribution of pain, reported sleep quality, and depressive symptoms to fatigue in fibromyalgia." *Pain.* 100, no. 3(2002): 271-9 UI 12467998.

The major objective of this research was to evaluate the predictors of fatigue in patients with fibromyalgia (FM), using cross-sectional and daily assessment methodologies. In the cross-sectional phase of the research involving a sample of 105 FM patients, greater depression and lower sleep quality were concurrently associated with higher fatigue. While pain was correlated with fatigue, it did not independently contribute to fatigue in the regression equation. For a subset of patients from the cross-sectional sample (n=63) who participated in a week of prospective daily assessment of their pain, sleep quality, and fatigue, multiple regression analysis of aggregated (averaged) daily scores revealed that previous day's pain and sleep quality predicted next day's fatigue. Depression from the cross-sectional phase was not related to aggregated daily fatigue scores. A path analytic framework was tested with disaggregated (removing between subjects variability) data in which pain was predicted to contribute to lower sleep quality which, in turn, was predicted to lead to greater fatigue. The results revealed that poor sleep quality fully accounted for the positive relationship between pain and fatigue, thus substantiating the mediational role of sleep quality. The findings are indicative of a dysfunctional, cyclical pattern of heightened pain and non-restful sleep underlying the experience of fatigue in FM.

Olsson, A. G., et al. "Are early clinical effects of cholesterol lowering mediated through effects on inflammation?" *Acta Physiologica Scandinavica.* 176, no. 2(2002): 147-50 UI 12354174.

In a randomized, double-blind trial in 3086 patients with unstable angina pectoris or non-Q wave myocardial infarction we investigated if 80 mg of atorvastatin daily could improve outcome of cardiovascular events during a short period of time (16 weeks) compared with placebo. Baseline LDL cholesterol was 3.2 mmol L-1 (124 mg dL-1) and decreased by 40% to 1.9 mmol L-1 (72 mg dL-1) during atorvastatin treatment. The primary endpoint, which was a composite of death, non-fatal acute myocardial infarction, cardiac arrest with resuscitation or recurrent symptomatic myocardial ischaemia with objective evidence and requiring emergency rehospitalization occurred in 228 patients (14.8%) in the atorvastatin group and 269 patients (17.4%) in the placebo group. The relative risk was 0.84 and 95% confidence interval was 0.70-1.00 (P = 0.048). Thus for patients with acute coronary syndromes, lipid-lowering therapy with high dose atorvastatin reduces recurrent ischaemic events in the short-term. A possible mechanism behind this rapid clinical effect induced by statin treatment is on inflammatory processes. Recent studies strongly suggest that acute T-cell activation is involved in the pathogenesis of unstable angina. In another study we investigated whether circulating T cells showed signs of activation in patients with stable angina pectoris (SA). Systemic venous blood samples were taken from 38 men with SA and 42 healthy controls. The T-cell receptor expression was assessed by three-colour flow cytometry using monoclonal antibodies against CD3,CD4, CD8, CD25 and human leucocyte antigen (HLA)-DR. Soluble interleukin-2 receptor (sIL-2R) was measured as the circulating form in serum. Levels of circulating CD3+ and CD4+ T cells tended to be higher in patients compared with controls. Patients were also shown to have a significant increase in CD4+ T cells expressing the activation markers CD25 ($P < 0.05$) and HLA-DR ($P < 0.01$). Furthermore, serum levels of sIL-2R were significantly higher ($P < 0.001$) in patients than in controls. We also observed that the T-cell response was more pronounced in patients without simvastatin treatment (n = 18) compared with simvastatin-treated patients (n = 20). In conclusion, our findings indicate that a continuous immune system activation takes place in patients with chronic angina

pectoris, predominantly involving proliferation of CD4+ T cells. Statin treatment seems to be able to decrease this inflammatory response.

Pace, K. T., et al. "Health-related quality of life after laparoscopic and open nephrectomy." *Surgical Endoscopy.* 17, no. 1(2003): 143-52 UI 12399838.

BACKGROUND: Postoperative recovery often is assessed with parameters (pain and return to work) susceptible to bias. This study sought objectively to compare postoperative health-related quality of life (HRQL) after laparoscopic and open nephrectomy with the Postoperative Recovery (PRS) (a validated questionnaire designed to assess pain), activities of daily living (ADL), and HRQL in postoperative patients. METHODS: Patients undergoing contemporaneous laparoscopic and open nephrectomy received the PRS pre- and postoperatively. The results were analyzed with analysis of covariance (ANCOV) and survival analysis. RESULTS: The 33 open nephrectomy and 38 laparoscopic patients in this study were comparable in age, gender, body mass index (BMI) and employment. Laparoscopic operative time was longer ($p = 0.015$), and the hospital stay was shorter ($p<0.001$). Laparoscopic patients had higher HRQL scores from postoperative days 3 to 365 ($p<0.001$), and they returned to preoperative HRQL faster ($p<0.001$). CONCLUSIONS: An objective HRQL instrument confirms that laparoscopic nephrectomy patients recover faster and with a higher HRQL than open surgery patients. The PRS can be modified for use after other abdominal procedures, and may prove useful for comparisons of other minimally invasive surgical techniques.

Pacula, R. L., et al. "State medical marijuana laws: understanding the laws and their limitations." *Journal of Public Health Policy.* 23, no. 4(2002): 413-39 UI 12532682.

Significant attention has been given to the debate regarding allowances for medical marijuana use since the 1996 California and Arizona ballot initiatives. State medical marijuana allowances, however, have existed since the mid-1970s. Much of the current debate stems from confusion about the various ways states approach the issue. In this paper, we present original legal research on current state medical marijuana laws identifying four different ways states statutorily enable the medical use of marijuana. We discuss the tension these approaches have with federal law as well as their implications regarding real access for patients. In addition, we present information on how a small number of states are trying to deal with the issue of access within the context of their medical marijuana laws, and discuss the implication of various supply approaches on the enforcement of other state marijuana laws.

Papadopoulos, E. C., et al. "Total knee arthroplasty following prior distal femoral fracture." *Knee.* 9, no. 4(2002): 267-74 UI 12424033.

BACKGROUND: Femoral fracture may predispose the knee to the development of post-traumatic arthritis by either a direct intra-articular injury or residual limb malalignment. Malunion, intra-articular osseous defects, limb malalignment, retained internal fixation devices, and compromised surrounding soft tissues may in turn affect the outcome of total knee arthroplasty (TKA) in these patients. The aim of our study was to evaluate the result of TKA in patients with previous distal femoral fracture. METHODS: The results of 48 cemented condylar total knee arthroplasties, performed between 1980 to 1998, in 47 patients with a previous distal femoral fracture were reviewed. There were 37 females and 10 males with an average age of 65 years (range, 19-84 years). Follow-up averaged 6.2 years (range, 2-16 years). No patients were lost to follow-up. RESULTS: At the time of arthroplasty a femoral fracture non-union was present in three knees, all of which were treated with a long stem cemented femoral component and bone grafting. Malunion, defined as angulation greater than 10 degrees in the coronal plain or greater than 15 degrees in

the sagittal plain, was present in 21 knees. Of these, six underwent distal femoral osteotomy during TKA. In the remaining 15 patients, with a malunion, the deformity was addressed by alterations in the orientation and location of bone resection. Other procedures were commonly needed at the time of arthroplasty and included: lateral retinacular release (22 knees), extensor mechanism realignment (eight knees), and collateral ligament reconstruction (two knees). The mean pre-operative Knee Society Scores were 40 (range, 0-80) for pain and 48 (range, 0-100) for function and improved significantly to a mean of 84 (range, 37-99) and 66 (range, 0-100) points, respectively, at the latest follow-up (P<0.001). The knee arc of motion improved from a pre-operative mean of 83-99 degrees at the latest follow-up (P<0.004). Post-operative manipulation under anesthesia for poor motion was carried out in four knees. Two knees had aseptic loosening that required subsequent revisions. Three knees developed deep infection which was treated with debridement and retention of components in one knee, arthrodesis in another, and eventual amputation in one knee. CONCLUSIONS: Significant improvement in function and relief of pain is seen in the vast majority of patients with previous distal femoral fractures undergoing subsequent TKA. However, these patients are at increased risk for restricted motion and perioperative complications following TKA. Special efforts to preserve the vascularity of the skin and subcutaneous tissues, restore limb alignment, ensure correct component positioning, and achieve soft tissue balance may help minimize the problems identified in this study.

Pasero, C., and M. McCaffery. "The patient's report of pain." *AJN, American Journal of Nursing.* 101, no. 12(2001): 73-4 UI 12585068.

Pasero, C., and M. McCaffery. "Tramadol." *AJN, American Journal of Nursing.* 103, no. 2(2003): 71, 73 UI 12582344.

Pepine, C. J., et al. "Comparison of effects of nisoldipine-extended release and amlodipine in patients with systemic hypertension and chronic stable angina pectoris." *American Journal of Cardiology.* 91, no. 3(2003): 274-9 UI 12565082.

The efficacy and safety of nisoldipine-extended release (ER) and amlodipine were compared in a 6-week multicenter, randomized, double-blind, double-dummy, parallel group, titration-to-effect trial in patients with stage 1 to 2 systemic hypertension (90 to 109 mm Hg diastolic blood pressure [BP]) and chronic stable angina pectoris. After a 3-week placebo run-in period, patients (n = 120) were randomly assigned to active treatment with either nisoldipine-ER (20 to 40 mg) or amlodipine (5 to 10 mg) once daily, titrated as necessary after 2 weeks to achieve diastolic BP <90 mm Hg. After 6 weeks, the mean reduction in systolic/diastolic BP from baseline was 15/13 mm Hg with nisoldipine-ER and 13/11 mm Hg with amlodipine (p = NS/p = NS). Both drugs resulted in similar BP responder rates (diastolic BP <90 mm Hg in 87% of patients who received nisoldipine-ER and 78% of patients on amlodipine, p = NS) and anti-ischemic responder rates (increasing exercise time >20% in 20% and 27%, respectively [p = NS], and increasing exercise time >60 seconds in 32% and 29% of patients, respectively [p = NS]. Also, after 6 weeks of active therapy, there was a similar mean increase in total exercise duration (23 seconds in the nisoldipine-ER group and 21 seconds in the amlodipine group, p = NS). Neither drug increased heart rate and both decreased frequency of anginal episodes. Adverse events were infrequent, and typically were vasodilator-related effects (including headache and peripheral edema) that occurred with somewhat higher incidence in the nisoldipine-ER group. Thus, nisoldipine-ER and amlodipine provided comparable antihypertensive and anti-ischemic efficacy, and both were generally well tolerated.

Persson, J., et al. "Ultrasound nucleolysis: an in vitro study." *Ultrasound in Medicine & Biology.* 28, no. 9(2002): 1189-97 UI 12401390.

Thermal intradiscal therapy for chronic low back pain, using a catheter inserted into the intervertebral disc, is becoming more popular in the treatment of low back pain. The aim of this study was to investigate the possibility of heating the nucleus pulposus of the intervertebral disc with high-intensity focused ultrasound (US) or HIFU. Two specific situations were considered, invasive transducers that would be in contact with the annulus fibrosus of the disc, and noninvasive transducers that could be used externally. Theoretical simulations were performed to find the optimal parameters of US transducers and then experimental studies were done using transducers made to these specifications. These experiments confirmed that it was possible to heat the discs with HIFU. Two orthogonal transducers resulted in a superior temperature distribution than using just one transducer. It is, therefore, feasible to consider thermal treatment of the nucleus pulposus of the disc using noninvasive US. Copyright 2002 World Federation for Ultrasound in Medicine & Biology

Peters, F. P., et al. "Reversible migratory osteoporosis in renal oncocytoma mimicking renal cell carcinoma with bone metastases." *Netherlands Journal of Medicine.* 60, no. 10(2002): 411-3 UI 12607593.

We report a case in which initially the wrong diagnosis of renal cell carcinoma with bone metastases was made. Nephrectomy and bone biopsy led to the right diagnosis of oncocytoma with transient osteoporosis. This report stresses the importance of pathological investigation and points to oncocytoma in the differential diagnosis of solid renal masses. In addition, the possible relationship between this tumour and migratory osteoporosis, which disappeared after surgery, is described.

Pfisterer, M., et al. "Outcome of elderly patients with chronic symptomatic coronary artery disease with an invasive vs optimized medical treatment strategy: one-year results of the randomized TIME trial.[comment]." *Jama.* 289, no. 9(2003): 1117-23 UI 12622581.

CONTEXT: The risk-benefit ratio of invasive vs medical management of elderly patients with symptomatic chronic coronary artery disease (CAD) is unclear. The Trial of Invasive versus Medical therapy in Elderly patients (TIME) recently showed early benefits in quality of life from invasive therapy in patients aged 75 years or older, although with a certain excess in mortality. OBJECTIVE: To assess the long-term value of invasive vs medical management of chronic CAD in elderly adults in terms of quality of life and prevention of major adverse cardiac events. DESIGN: One-year follow-up analysis of TIME, a prospective randomized trial with enrollment between February 1996 and November 2000. SETTING AND PARTICIPANTS: A total of 282 patients with Canadian Cardiac Society class 2 or higher angina despite treatment with 2 or more anti-anginal drugs who survived for the first 6 months after enrollment in TIME (mean age, 80 years [range, 75-91 years]; 42% women), enrolled at 14 centers in Switzerland. INTERVENTIONS: Participants were randomly assigned to undergo coronary angiography followed by revascularization (if feasible) (n = 140 surviving 6 months) or to receive optimized medical therapy (n = 142 surviving 6 months). MAIN OUTCOME MEASURES: Quality of life, assessed by standardized questionnaire; major adverse cardiac events (death, nonfatal myocardial infarction, or hospitalization for acute coronary syndrome) after 1 year. RESULTS: After 1 year, improvements in angina and quality of life persisted for both therapies compared with baseline, but the early difference favoring invasive therapy disappeared. Among invasive therapy patients, later hospitalization with revascularization was much less likely (10% vs 46%; hazard ratio [HR], 0.19; 95% confidence interval [CI], 0.11-0.32; P<.001). However, 1-year mortality (11.1% for invasive; 8.1% for medical; HR, 1.51; 95% CI, 0.72-3.16; P =.28) and death or

nonfatal myocardial infarction rates (17.0% for invasive; 19.6% for medical; HR, 0.90; 95% CI, 0.53-1.53; P =.71) were not significantly different. Overall major adverse cardiac event rates were higher for medical patients after 6 months (49.3% vs 19.0% for invasive; P<.001), a difference which increased to 64.2% vs 25.5% after 12 months (P<.001). CONCLUSIONS: In contrast with differences in early results, 1-year outcomes in elderly patients with chronic angina are similar with regard to symptoms, quality of life, and death or nonfatal infarction with invasive vs optimized medical strategies based on this intention-to-treat analysis. The invasive approach carries an early intervention risk, while medical management poses an almost 50% chance of later hospitalization and revascularization.

Pham, T., et al. "Supraspinal antinociceptive effects of mu and delta agonists involve modulation of adenosine uptake." *Anesthesiology.* 98, no. 2(2003): 459-64 UI 12552206.

BACKGROUND: The modulation of extracellular adenosine concentration by opioids provides evidence that the antinociceptive effects of these compounds involve endogenous adenosine. The aim of this study was to determine whether there is a relation between the inhibition of brain synaptosome adenosine uptake by opioid agonists and the analgesic effects of these compounds. METHODS: The authors used the hot plate and tail-pinch tests to evaluate in mice (C57BL/6 females; weight, 25-30 g) the effects of caffeine, a nonspecific adenosine receptor antagonist, on the antinociceptive effect induced by the intracerebroventricular administration of oxymorphone as a mu agonist, SNC80 as a delta agonist, or U69593 as a kappa agonist. They also investigated the effect of these opioid receptor agonists on the uptake of adenosine by whole brain synaptosomes. RESULTS: Caffeine decreased the analgesic effects induced by oxymorphone or SNC80 but not those induced by U69593. Oxymorphone and SNC80 inhibited adenosine uptake by brain cells, but U69593 did not. CONCLUSION: The antinociceptive effects obtained with mu or delta (but not kappa) agonists administered supraspinally were indicative of the involvement of modulation of adenosine uptake.

Polianskis, R., T. Graven-Nielsen, and L. Arendt-Nielsen. "Spatial and temporal aspects of deep tissue pain assessed by cuff algometry." *Pain.* 100, no. 1-2(2002): 19-26 UI 12435455.

This study assessed spatial and temporal aspects of pressure pain during increasing and constant compressions using a cuff algometer and during adaptive compressions using a closed-loop feedback system for maintaining stable pain. Experimental setup consisted of a pneumatic tourniquet cuff, a computer-controlled air compressor, and a 10-cm electronic visual analogue scale (VAS). The first experiment assessed spatial summation for cuff pain by recording the pressure-pain stimulus-response (SR) function during increasing compressions with single and double cuffs. The second experiment assessed temporal profile of cuff pain during constant compression for 10 min beginning at pain intensities of 2, 4, and 6 cm on the VAS. The third experiment assessed temporal pressure profile when pain was maintained for 10 min by a close-loop system within target zones of +/-0.5 cm VAS at pain intensities of 2, 4, and 6 cm on the VAS.Doubling the tissue volume under the cuff shifted the SR function to the left, demonstrating spatial summation. The constant cuff pressure evoked typical biphasic response consisting of an overshoot in pain intensity, followed by decreasing pain, or adaptation. The pain intensity was significantly correlated to the time of constant stimulation, showing time-dependency of pain encoding. Both overshoot magnitude and adaptation rate were dependent on the starting pain intensity. The pain decrease rate was lowest for a pain intensity of 2 cm on the VAS. The overshoot magnitude was lowest for a pain intensity of 6 cm on the VAS. Both the overshoot and the adaptation were maximal for a pain intensity of 4 cm on the VAS. The oscillating pressure generated by closed-loop system led to

constant rather than adapting pain at intensities of 2, 4, and 6 cm on the VAS.The cuff algometer is highly configurable tool for assessment of pain sensitivity by pressure-pain and time-pain functions. The presented models are useful additions to a researcher's armamentarium for further pharmacological and clinical studies on deep tissue pain and related mechanisms.

Putzke, J. D., et al. "Interference due to pain following spinal cord injury: important predictors and impact on quality of life." *Pain.* 100, no. 3(2002): 231-42 UI 12467994.

Two studies were designed to examine important predictors of pain following spinal cord injury (SCI), and the impact of pain on self-reported quality of life (QOL). Pain was defined as "interference in day-to-day activities secondary to pain". In order to determine risk factors associated with the development of pain interference, Study 1 examined the predictive validity of multiple demographic, medical, and QOL variables at year 1 post-SCI to self-reported pain interference 2 years post-injury. Results showed that middle age (30-59-year-olds), lower self-reported mental health, and pain interference at 1 year post-SCI were the most important unique predictors of pain interference 2 years post-SCI. In Study 2, participants were separated into four groups; (1) those pain-free at years 1 and 2, (2) those pain-free at year 1 and in pain at year 2, (3) those in pain at year 1 and pain-free at year 2, and (4) those in pain at years 1 and 2. Results showed that only those experiencing a change in pain interference status reported a change in QOL. More specifically, those developing pain interference (group 2) from year 1 to year 2 reported decreased life satisfaction, physical health, and mental health, whereas, those with resolving pain interference from year 1 to year 2 reported an increase in these same domains. Unexpectedly, change in pain interference status was unrelated to change in self-reported handicap. Implications and future directions are discussed.

Ragab, A. A., M. A. Fye, and H. H. Bohlman. "Surgery of the lumbar spine for spinal stenosis in 118 patients 70 years of age or older." *Spine.* 28, no. 4(2003): 348-53 UI 12590208.

STUDY DESIGN: A consecutive case retrospective chart review and an outcome satisfaction questionnaire were used in this study. OBJECTIVE: To provide a surgical reference for surgeons and elderly patients who may have concerns regarding the safety and outcome of lumbar spine surgery in their age population. SUMMARY OF BACKGROUND DATA: Elderly patients scheduled for spine surgery have a major concern about the safety and outcome of the procedure in light of their advanced age. A review of the literature demonstrated conflicting results regarding the outcome of lumbar spine surgery for spinal stenosis in the elderly. METHODS: A retrospective review evaluated 118 consecutive patients ages 70 to 101 years who were managed surgically for lumbar spinal stenosis. This patient population was analyzed for the operative procedure, postoperative morbidity and mortality, and long-term clinical outcome and satisfaction. All 118 patients had at least a 2-year follow-up evaluation, and 21 of these patients were older than 80 years. Clinical parameters were compiled and analyzed on the basis of chart review. RESULTS: Overall morbidity occurred in 24 patients (20%). During the study period, the average length of hospitalization declined an average of 2 days. Of the 118 patients, 109 expressed satisfaction with the operation and resumed daily activities, whereas 9 had fair or poor results. CONCLUSIONS: Advanced age did not increase the morbidity associated with this operation because the results reported in this study are comparable with those from other studies of a younger population, nor did advanced age decrease patient satisfaction or return to activities.

Renfrey, S., C. Downton, and J. Featherstone. "The painful reality." *Nature Reviews. Drug Discovery.* 2, no. 3(2003): 175-6 UI 12619637.

Rey, E., et al. "Long-term outcome of patients with non-cardiac chest pain." *Revista Espanola de Enfermedades Digestivas.* 94, no. 1(2002): 25-33 UI 12073666.

OBJECTIVE: To assess long-term outcome for patients with chest pain in our environment, to estimate direct resource use, and to evaluate the influence of patient views regarding pain origin on outcome. PATIENTS AND METHODS: All patients referred to our Department between 1994 and 1998 to undergo pH-metry as a result of chest pain were identified. Those detected were subjected to a structured direct interview on the telephone. RESULTS: 104 patients with a follow-up period (since pH-metry) of 3.76 years were evaluated. Thirty nine percent of patients were free from pain (37.5%), and one had died from a seemingly unrelated cause (1%), whereas the rest still suffered from pain. The mean number of visits per patient during the last year was 2.83 to their general practitioner, 1.04 to an specialist, and 0.99 to an Emergency Unit; hospitalisations were 0.26, and ICU admissions 0.09. Patients who trusted medical diagnoses showed better outcomes than those who did not trust or understand them, in association with lower resource use, particularly Emergency Unit use. CONCLUSION: Patients with chest pain had a favourable life prognosis, but 60% still suffer from pain after nearly 4 years of follow-up, which entails a relevant use of health-care resources. Trust in medical diagnosis seemingly influences outcome, and the use of diagnostic procedures to determine pain origin is thus likely beneficial for patient.

Riley, J. L., 3rd, G. H. Gilbert, and M. W. Heft. "Race/ethnic differences in health care use for orofacial pain among older adults." *Pain.* 100, no. 1-2(2002): 119-30 UI 12435465.

The purpose of this study was to describe race/ethnic differences in the use of formal health care services for painful oral symptoms by older adults. We also considered the sex of the respondent rather than assuming that males and females within a specific racial group would use health care services similarly. To our knowledge, these specific utilization patterns have never been reported before in the pain literature.Telephone interviews were conducted on a stratified random sample of 1,636 community dwelling older (65+) north Floridians. A total of 5,860 households were contacted and screened, with 75.3% participating to the point where their eligibility for the study could be determined.Overall race/ethnic differences in patterns of health care use for orofacial pain were not found. However, when we stratified race/ethnicity by sex, Black females (37.6%) were the least likely to have visited a health care provider, followed by non-Hispanic White females (47.2%), non-Hispanic White males (49.3%), and Black males (62.7%). Point estimates of odds ratio, adjusting for financial differences, indicate that more non-Hispanic White males (OR=1.79) and Black males (OR=2.74) visited a health care provider than Black females.Our results also suggest that for older Black adults, financial constraints have a more significant impact on decisions about health care for orofacial pain than they do for non-Hispanic Whites. For non-Hispanic White respondents, characteristics of the pain symptoms were significant determinates of health care use for their painful oral symptoms. Pain at its worst was a positive predictor for four of the five analyses (jaw joint pain, painful oral sores, temperature sensitivity, and toothache pain). The duration variable (years with pain) was a negative predictor of health care use. This is consistent with the conclusion that individuals seek care early in the course of the symptom, i.e. an active care seeking phase, make emotional or physical adjustments, and then resign themselves to the symptoms.

Riley, J. L., 3rd, et al. "Racial/ethnic differences in the experience of chronic pain.[comment]." *Pain.* 100, no. 3(2002): 291-8 UI 12468000.

The purpose of this study was to examine racial/ethnic-related differences in a four-stage model of the processing of chronic pain. The subjects were 1557 chronic pain patients (White=1084, African American=473) evaluated at a pain management clinic at a large southeastern university medical center. Using an analysis of covariance controlling for pain duration and education, African American patients reported significantly higher levels of pain unpleasantness, emotional response to pain, and pain behavior, but not pain intensity than Whites. Differences were largest for the unpleasantness and emotion measures, particularly depression and fear. The groups differed by approximately 1.0 visual analogue scale unit, a magnitude that may be clinically significant. Racial/ethnic differences in the linear relationship between stages were also tested using structural equation modeling and LISREL-8. The results indicate differences in linear associations between pain measures with African Americans showing a stronger link between emotions and pain behavior than Whites.

Ringe, J. D., et al. "Transdermal fentanyl for the treatment of back pain caused by vertebral osteoporosis." *Rheumatology International.* 22, no. 5(2002): 199-203 UI 12215866.

Pain relief for patients with osteoporosis is important to maintain mobility and facilitate physical therapy. Transdermal fentanyl may be useful but has not been studied systematically. Patients with at least one osteoporotic vertebral fracture requiring strong opioids were enrolled and received transdermal fentanyl. Treatment history, pain, ease of physical therapy, and quality of life were recorded at baseline and after 4 weeks. Of 64 patients enrolled, 49 completed the study; 12 withdrew because of adverse events, most commonly nausea, vomiting, or dizziness. Pain at rest and on movement decreased significantly from baseline to final assessment (mean scores 7.84 and 8.55, respectively, at baseline, falling to 3.56 and 4.50 after 4 weeks). Quality of life improved significantly, and 61% of patients were satisfied with the treatment. Ability to undergo physical therapy improved significantly. Transdermal fentanyl is useful for the treatment of severe back pain caused by osteoporosis.

Rowbotham, D. J. "COX-2-selective inhibitors: clinical relevance in surgical and acute pain." *European Journal of Anaesthesiology - Supplement.* 25(2002): 11-20 UI 12449673.

Rupp, H., A. Zarain-Herzberg, and B. Maisch. "The use of partial fatty acid oxidation inhibitors for metabolic therapy of angina pectoris and heart failure." *Herz.* 27, no. 7(2002): 621-36 UI 12439634.

BACKGROUND: Partial fatty acid oxidation inhibitors have raised great interest since they are expected to counteract a dysregulated gene expression of hypertrophied cardiocytes. Some of these compounds have been developed for treating non-insulin-dependent diabetes mellitus and stable angina pectoris. A shift from fatty acid oxidation to glucose oxidation leads to a reduced gluconeogenesis and improved economy of cardiac work. An increased glucose oxidation can be achieved with the following enzyme inhibitors: etomoxir, oxfenicine, methyl palmoxirate, S-15176, metoprolol, amiodarone, perhexiline (carnitine palmitoyltransferase-1); aminocarnitine, perhexiline (carnitine palmitoyltransferase-2); hydrazonopropionic acid (carnitine-acylcarnitine translocase); MET-88 (gamma-butyrobetaine hydroxylase); 4-bromocrotonic acid, trimetazidine, possibly ranolazine (thiolases); hypoglycin (butyryl-CoA dehydrogenase); dichloroacetate (pyruvate dehydrogenase kinase). CLINICAL TRIALS with trimetazidine and ranolazine showed that this shift in substrate oxidation has an antianginal action. Etomoxir and MET-88 improved the function of overloaded hearts by increasing the density of the Ca(2+) pump of sarcoplasmic reticulum (SERCA2). The promoters of SERCA2 and alpha-

myosin heavy-chain exhibit sequences which are expected to respond to transcription factors responsive to glucose metabolites and/or peroxisome proliferator-responsive element (PPAR) agonists. Further progress in elucidating novel compounds which upregulate SERCA2 expression is closely linked to the characterization of regulatory sequences of the SERCA2 promoter. [References: 158]

Salmore, R. "Development of a new pain scale: Colorado Behavioral Numerical Pain Scale for sedated adult patients undergoing gastrointestinal procedures." *Gastroenterology Nursing.* 25, no. 6(2002): 257-62 UI 12488689.

A limited number of studies have addressed pain assessment among sedated patients undergoing a gastrointestinal examination. The Colorado Behavioral Numerical Pain Scale is a quick, simple tool that can provide an estimation of the patient's comfort level while sedated. Multiple studies completed in intensive care unit and postanesthesia care unit settings provide ample evidence of the accuracy of behavioral pain scales ratings. In developing the Colorado Behavioral Numerical Pain Scale, experienced endoscopy nurses provided suggestions and modifications of descriptive words for behavioral assessment of pain selected from the relevant literature. Three nurses simultaneously rated pain using the scale for 30 procedures. Interrater reliability was high with 82% of observations in total agreement and 17% having one of the three persons disagreeing on the rating. Nurses from four hospitals and one ambulatory facility also evaluated the Colorado Behavioral Numerical Pain Scale tool. In this evaluation, 98% of the 52 respondents agreed that the words described what they observed during a gastrointestinal examination and 94% felt it was a better descriptor of pain than a patient self-report numerical scale. Assessment of pain for the sedated patient undergoing gastrointestinal procedures is often difficult due to the patient's inability to report pain levels. The sedated patient undergoing painful procedures depends on the nurse to interpret physical signs to quantify his or her distress. The Acute Pain Management Guidelines (AHCPR, 1992) promotes the use of both physiological and behavioral responses to pain for assessment when self-report is absent. While an individual's self-report of pain intensity and distress is the most accurate assessment measurement, the validity of a sedated patient's elicited response about pain is questionable. It is the nurse, through observation, who attempts to assess the sedated individual's pain levels.

Sandhu, F. A., et al. "Occipitocervical fusion for rheumatoid arthritis using the inside-outside stabilization technique." *Spine.* 28, no. 4(2003): 414-9 UI 12590220.

STUDY DESIGN: A retrospective study investigating the clinical outcome of the inside-outside cranial bolt technique for occipitocervical stabilization used to manage rheumatoid arthritis was conducted. OBJECTIVE: To evaluate the safety and efficacy of the inside-outside technique for occipitocervical stabilization used to manage rheumatoid patients. SUMMARY OF BACKGROUND DATA: Achieving occipital cervical fusion for patients with rheumatoid arthritis is a complex and challenging problem. Complications related to placement of occipital screws have been reported. METHODS: Occipitocervical stabilization was used for atlantoaxial subluxation or basilar invagination in 21 patients with rheumatoid arthritis. The patients were assessed for pre- and postoperative neurologic status (Ranawat classification), neck pain, fusion and alignment, hardware complications, and continued posterior cranial settling. All the patients underwent stabilization using inside-outside occipital screws. The technique involves bilateral fixation of cervical plates to the occiput using inside-outside screws, and to the cervical spine using pars screws at C2 or lateral mass screws at subaxial levels. Bone grafting was accomplished with autologous rib or iliac crest graft. RESULTS: During the study, 14 women and 7 men with rheumatoid arthritis underwent occipitocervical stabilization and fusion. The average age of the patients was 65 years, and the mean follow-up period was 25.5 months. There were no surgical complications. Neck pain was reduced from an average Ranawat pain

score of 2.40 to 0.4 (P < 0.0001). The Ranawat neurologic grade improved in 62% of the patients with preoperative neurologic deficit. Further cranial settling was not observed in any patient. There were no complications from implants and no incidence of instrumentation failure. CONCLUSIONS: The "inside-outside" technique is safe and effective for stabilizing the occipitocervical junction in rheumatoid patients. It is associated with significant reduction of neck pain, improved neurologic status, and maintenance of alignment and stability.

Santiveri, X., et al. "Anaesthetic and postoperative analgesic effects of spinal clonidine as an additive to prilocaine in the transurethral resection of urinary bladder tumours." *European Journal of Anaesthesiology.* 19, no. 8(2002): 589-93 UI 12200949.

BACKGROUND AND OBJECTIVE: The alpha 2-adrenoceptor agonist clonidine has potent central antinociceptive properties. The study was designed to investigate the effects of the combined subarachnoid administration of clonidine and prilocaine on spinal block and postoperative analgesia for the transurethral resection of tumours in the urinary bladder. METHODS: The controlled, prospective, double-blind study enrolled 40 patients scheduled for elective transurethral resection of bladder tumours under spinal anaesthesia with prilocaine. Patients were randomly assigned to receive an intrathecal injection of prilocaine 75 mg alone (control group) or in combination with clonidine 75 micrograms. We assessed haemodynamic changes (non-invasive arterial pressure, heart rate), pulse oximetry, the upper level of block, the onset and duration of sensory and motor block, postoperative analgesia and any adverse effects. RESULTS: There were no statistically significant differences in demographic data, heart rate, onset time or the levels of sensory or motor block. Analgesia lasted significantly longer in the clonidine group (498.4 +/- 226.9 versus 187.2 +/- 103.1 min; P < 0.05). The duration of motor block was longer in the clonidine group (165.5 +/- 30.6 min) than in the control group (139.7 +/- 40.4 min; P < 0.05) and the duration of sensory block was also longer in the clonidine group (157.3 +/- 24.5 min) than in the control group (137.2 +/- 31.2 min; P < 0.05). Fewer patients in the recovery room needed metamizol (dipyrone) in the clonidine group (5%) than in the control group (50%). Arterial pressure decreased significantly in the clonidine group 75-135 min after the block. CONCLUSIONS: The addition of clonidine 75 micrograms to prilocaine 75 mg for subarachnoid anaesthesia increased the duration of sensory and motor block and reduced the need for additional postoperative analgesics by providing excellent analgesia for about 8 h during recovery from transurethral resection of bladder tumours.

Schaeffer, A. J. "Editorial: Emerging concepts in the management of prostatitis/chronic pelvic pain syndrome.[comment]." *Journal of Urology.* 169, no. 2(2003): 597-8 UI 12544315.

Schull, M. J., et al. "Emergency department overcrowding and ambulance transport delays for patients with chest pain." *CMAJ Canadian Medical Association Journal.* 168, no. 3(2003): 277-83 UI 12566332.

OBJECTIVE: Emergency department overcrowding sometimes results in diversion of ambulances to other locations. We sought to determine the resulting prehospital delays for cardiac patients. METHODS: Data on consecutive patients with chest pain who were transported to Toronto hospitals by ambulance were obtained for a 4-month period in 1997 and a 4-month period in 1999, which represented periods of low and high emergency department overcrowding respectively. Multivariate analyses were used to model 90th percentile system response (initiation of 9-1-1 call to arrival on scene), on-scene (arrival on scene to departure from scene) and transport (departure from scene to arrival at hospital) intervals. Predictor variables were study period (1997 or 1999), day of the week, time of day, geographic location

of the patient, dispatch priority, case severity, return priority and number of other patients with chest pain transported within 2 hours of the index transport. RESULTS: A total of 3609 patients (mean age 66.3 years, 50.3% female) who met the study criteria were transported by ambulance during the 2 study periods. There were no significant differences in patient characteristics between the 2 periods, despite the fact that more patients were transported during the second period ($p < 0.001$). The 90th percentile system response interval increased by 11.3% from the first to the second period (9.7 v. 10.8 min, $p < 0.001$), whereas the on-scene interval decreased by 8.2% (28.0 v. 25.7 min, $p < 0.001$). The longest delay was in the transport interval, which increased by 28.4% from 1997 to 1999 (13.4 v. 17.2 min, $p < 0.001$). In multivariate analyses, the study period (1997 v. 1999) remained a significant predictor of longer transport interval ($p < 0.001$) and total prehospital interval ($p = 0.004$). INTERPRETATION: An increase in overcrowding in emergency departments was associated with a substantial increase in the system response interval and the ambulance transport interval for patients with chest pain.

Seeber, P. W., and V. J. Staschiak. "Diagnosis and treatment of ankle pain with the use of arthroscopy." *Clinics in Podiatric Medicine & Surgery.* 19, no. 4(2002): 509-17, vi UI 12471858.

One of the most common pathologies associated with chronic ankle pain is anterolateral ankle impingement secondary to an inversion ankle sprain. An average of one ankle sprain per 10,000 people occur every day. After an ankle sprain 10% to 50% of patients have some form of chronic ankle pain, which the authors consider to be pain that lasts over three months. The use of ankle arthroscopy allows us to directly inspect all of the intra-articular structures at a magnified view without the need for multiple arthrotomies. [References: 5]

Setler, P. E. "Therapeutic use of botulinum toxins: background and history." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S119-24 UI 12569958.

The seven botulinum neurotoxin serotypes share less than 50% sequence homology and are immunologically distinct. The neurotoxins inhibit release of the neurotransmitter acetylcholine from the axon terminals of motor neurons, preganglionic sympathetic and parasympathetic neurons, and postganglionic parasympathetic nerves by a multi-step mechanism that differs slightly, but significantly, for each serotype. The inhibition is long lasting but temporary. The resulting muscle paralysis has provided the basis for therapeutic use of botulinum toxin types A and B in a variety of focal dystonias. The safety of the botulinum toxins, when administered focally, has permitted their widespread use in a number of other painful conditions. [References: 55]

Shapiro, G. S., G. Taira, and O. Boachie-Adjei. "Results of surgical treatment of adult idiopathic scoliosis with low back pain and spinal stenosis: a study of long-term clinical radiographic outcomes." *Spine.* 28, no. 4(2003): 358-63 UI 12590210.

STUDY DESIGN: A case series of adults with surgical treatment for adult idiopathic thoracolumbar and/or lumbar scoliosis, low back pain, and spinal stenosis was studied. OBJECTIVE: To assess pain relief, curve correction, and complications after combined procedures consisting of decompression, spine fusion, and stabilization. SUMMARY OF BACKGROUND DATA: Only one publication has focused specifically at this group, and this was before the advent of modern segmental instrumentation. This is the first report of long-term follow-up evaluation in such a patient population. METHODS: This study included 16 patients who underwent elective anterior and posterior surgical reconstruction for adult idiopathic thoracolumbar and/or lumbar scoliosis, spinal stenosis, and low back pain with a minimum follow-up period of 2 years. Radiographic findings, clinical results, and long-term outcome data were obtained using the Modified Scoliosis Research Society

outcome instrument and the Oswestry Disability Back Pain Questionnaire. RESULTS: Restoration of coronal and sagittal balance, or improvement thereof, was achieved in all the patients with balance problems. There was significant improvement in all outcome domains. Overall, 94% of the patients were satisfied with the surgery. Ten major complications occurred in 10 patients, 8 of whom required additional surgery. There were two minor complications. CONCLUSIONS: Combined symptoms of back pain and spinal stenosis require complex reconstructive surgery in adults with idiopathic thoracolumbar and/or lumbar scoliosis. Significant pain relief, functional restoration, and satisfaction can be achieved and maintained over the long term in the properly selected patient.

Shenoy, M. M., R. Sengupta, and A. Khanna. "Atrial pacing stress echocardiography: an alternative diagnostic test for chest pain in the elderly." *American Journal of Geriatric Cardiology.* 11, no. 6(2002): 404-9 UI 12417847.

The authors utilized rapid right atrial pacing and handgrip exercise to provoke myocardial ischemia in 20 participants (age >65 years) who, for reasons of disability, were not candidates for exercise and pharmacologic stress testing. Echocardiographic left ventricular ejection fraction and left ventricular wall motions were obtained during pacing at baseline and at maximal pacing rates and were compared with coronary angiography. Using the failure of left ventricular ejection fraction to increase with pacing as an indicator of myocardial ischemia, the test yielded a sensitivity of 75%, specificity of 100%, positive predictive value of 100%, and negative predictive value of 71%. When a pacing-induced decrease of wall-motion index was taken as an ischemia indicator, the sensitivity was 63%, specificity 100%, positive predictive value 100%, and negative predictive value 80%. Rapid atrial pacing echocardiography is a safe test. It may be considered in a select group of elderly patients as an alternative to exercise or pharmacologic tests before resorting to coronary angiography. Copyright 2002 CVRR, Inc.

Sheridan, P. J., and D. C. Crossman. "Critical review of unstable angina and non-ST elevation myocardial infarction." *Postgraduate Medical Journal.* 78, no. 926(2002): 717-26 UI 12509688.

Within the coronary vasculature the progression of a stable atherosclerotic plaque into a vulnerable and ultimately unstable lesion leads to a cascade of events culminating in the clinical presentation of unstable angina or acute myocardial infarction. In recent years studies have provided new insights in to the pathology and natural history, stimulating advances in diagnosis, treatment, and management. The review discusses the progress made including the role of inflammation, cardiac biomarkers, antiplatelet therapy, and percutaneous intervention. Current issues of debate and future directions are also addressed. [References: 86]

Shiina, K., et al. "Diagnosis of effort angina pectoris at rest by first derivative electrocardiography." *Journal of Cardiology.* 40, no. 5(2002): 199-206 UI 12463094.

OBJECTIVES: First derivative electrocardiography (FDECG) records the slope of the wave of the standard 12-lead electrocardiography (ECG) and enables quantification of ECG-T wave symmetry. This study investigated the usefulness of FDECG to diagnose effort angina pectoris in patients with chest pain. METHODS: All 62 patients who visited our hospital with exertional chest pain underwent FDECG at rest, and exercise electrocardiography or stress thallium scintigraphy. Patients with possible ischemic change underwent coronary angiography, and those with significant coronary artery stenosis (> or = 75% reduction) were classified as the angina pectoris group (23 subjects). The other patients (without ischemic change or without significant coronary artery stenosis) formed the non-angina pectoris group (39 subjects). The FDECG is a simple differential wave with two peaks. The first peak

of the FDECG-T wave designated as the T1 wave and the second peak as the T2 wave. The heights (the T1 and T2 wave amplitude) and the T2/T1 ratio (T2 wave heights/T1 wave heights) were calculated in the two groups. RESULTS: The T2/T1 ratios in leads I, V3, V4, V5 and V6 were significantly (I, V3, V4: $p < 0.01$, V5: $p < 0.0001$, V6: $p < 0.001$) decreased in the angina pectoris group. Using the criterion of a T2/T1 ratio at the V5 lead of less than 1.30, FDECG could detect effort angina pectoris patients with 65% in sensitivity, 74% specificity and 71% accuracy. CONCLUSIONS: ECG-T waves in the angina pectoris group were symmetrical. T2/T1 ratio of the FDECG-T wave is a useful index to diagnose effort angina pectoris at rest.

Shimokawa, H., et al. "Anti-anginal effect of fasudil, a Rho-kinase inhibitor, in patients with stable effort angina: a multicenter study." *Journal of Cardiovascular Pharmacology.* 40, no. 5(2002): 751-61 UI 12409984.

Rho-kinase plays an important role in calcium sensitization for vascular smooth muscle (VSMC) contraction and may be involved in the inappropriate coronary vasoconstriction during exercise-induced myocardial ischemia. In this multicenter phase II study, the anti-anginal effect of fasudil, which is metabolized to a specific Rho-kinase inhibitor hydroxyfasudil after oral administration, was examined in patients with stable effort angina. In the phase IIa trial, after a 2-week washout period of anti-anginal drugs, 45 patients received increasing doses of fasudil (5, 10, and 20 mg TID for every 2 weeks). The fasudil treatment significantly prolonged the maximum exercise time and the time to the onset of 1-mm ST segment depression on treadmill exercise test (both $p < 0.01$), whereas blood pressure and heart rate during exercise were unchanged before and after the treatment. Higher doses of fasudil (20 and 40 mg TID) were subsequently tested in 22 patients in the same manner with similar positive results. In the phase IIb trial, after a 2-week washout period of anti-anginal drugs, 125 patients were assigned, in a double-blind manner, to a 4-week oral treatment with a different dose of fasudil (5, 10, 20, or 40 mg TID) and treadmill exercise test was performed before and after the treatment. Again, both maximum exercise time and time to the onset of 1-mm ST segment depression were prolonged in all groups. A significant dose-response relation was noted across the treatment groups for the exercise tolerance index that was determined by the combined effect of exercise time and ST segment depression ($p = 0.006$). Fasudil was well tolerated in both trials without any serious adverse reactions. These results suggest the efficacy and adequate safety profile of fasudil, the first drug in a novel class of vasodilators, for the treatment of stable effort angina.

Singh, R. M., and S. L. Wyant. "Pain management content in curricula of U.S. schools of pharmacy." *Journal of the American Pharmaceutical Association.* 43, no. 1(2003): 34-40 UI 12585749.

OBJECTIVES: To identify individuals in schools of pharmacy in the United States who are responsible for covering the topic of pain management in courses for doctor of pharmacy students and to describe how and at what depth pain management is covered in pharmacy school curricula. DESIGN: One-time qualitative assessment. SETTING: Schools of pharmacy in the United States. PARTICIPANTS Twenty-eight faculty members with the rank of professor, associate professor, or assistant professor who had been employed in their current positions for at least 2 years and who were directly involved in preparing and teaching didactic courses that address pain management. INTERVENTION: In-depth telephone interviews. MAIN OUTCOME MEASURES: Qualitative responses to open-ended interview questions. RESULTS: While pain management was included in the curricula of all 28 schools of pharmacy, it was generally covered in a fragmented way, usually as part of presentations on diseases with pain as a prominent feature (e.g., cancer pain addressed during oncology lectures) or as part of discussions of analgesics. Only two schools offered

stand-alone courses in pain management, and both of those courses were electives that were taken by an average of 15 students per year. Three-fourths of respondents believed that pain was being given too little emphasis in their schools' curricula. Palliative care and the use of medications in the treatment of cancer pain was not presented in a standardized manner, and respondents were unsure of how the subject was covered in pharmacy law classes. Instruction about the diagnosis of pain, patient assessment, and physical examination was reported as "minimal" by most respondents. Respondents perceived a need for a single, complete reference and teaching resource that would address the entire spectrum of pain management as it applies to pharmacy. CONCLUSION: The topic of pain management is poorly presented and inadequately developed in the curricula of many U.S. schools of pharmacy.

Slatkin, N. E., and M. Rhiner. "Phenol saddle blocks for intractable pain at end of life: report of four cases and literature review." *American Journal of Hospice & Palliative Care.* 20, no. 1(2003): 62-6 UI 12568439.

Four cancer patients with prior bladder diversions had phenol neurolytic saddle blocks performed for intractable pelvi-sacral pain. All patients had advanced disease, the focus of their treatment being palliative. Treatment limiting side effects precluded further upward titration of systemic analgesic therapies. Pain control improved after intrathecal neurolysis and allowed a greater than 60 percent reduction in systemic opiate dosage. No significant block-related adverse effects were encountered. The value and technical aspects of intrathecal saddle blocks in end-of-life pain management is discussed. [References: 16]

Smith, H. S., J. Audette, and M. A. Royal. "Botulinum toxin in pain management of soft tissue syndromes." *Clinical Journal of Pain.* 18, no. 6 Suppl(2002): S147-54 UI 12569962.

Botulinum toxin is approved for the treatment of muscle overactivity associated with several disorders, such as dystonias. However, control of muscle spasm often results in pain relief as well. Effective relief of pain associated with myofascial pain syndrome provides a model for the use of botulinum toxin to relieve pain associated with other types of soft-tissue syndromes, such as fibromyalgia. Although the mechanisms that trigger the pain in these syndromes vary, recent data suggest that a central neuroplastic mechanism may contribute to many complex pain syndromes. Botulinum toxin therapy may be particularly useful in soft-tissue syndromes that are refractory to traditional treatment with physical therapy, electrical muscle stimulation, and other approaches. Although not used as first-line therapy for pain relief, botulinum toxin may decrease pain long enough for patients to resume more conservative therapy. A primary benefit of treatment with botulinum toxin is its long duration of action. Several studies have demonstrated the efficacy of botulinum toxin types A and B in treating several neuropathic pain disorders. Proper patient selection, injection technique, and dosing are critical to obtaining the best outcomes in managing pain with botulinum toxin. Additional study is needed to better characterize its use for the treatment of pain. [References: 82]

Smith, P. F. "Cannabinoids in the treatment of pain and spasticity in multiple sclerosis." *Current Opinion in Investigational Drugs.* 3, no. 6(2002): 859-64 UI 12137404.

There is a large amount of evidence to support the view that the psychoactive ingredient in cannabis, delta9-tetrahydrocannabinol (delta9-THC), and cannabinoids in general, can reduce muscle spasticity and pain under some circumstances. Cannabinoid (CB1) receptors in the CNS appear to mediate both of these effects and endogenous cannabinoids may fulfil these functions to some extent under normal circumstances. However, in the context of multiple sclerosis (MS), it is still

questionable whether cannabinoids are superior to existing, conventional medicationsfor the treatment of spasticity and pain. In the case of spasticity, there are too few controlled clinical trials to draw any reliable conclusion at this stage. In the case of pain, most of the available trials suggest that cannabinoids are not superior to existing treatments; however, few trials have examined chronic pain syndromes that are relevant to MS. Whether or not cannabinoids do have therapeutic potential in the treatment of MS, a further issue will be whether synthetic cannabinoids should be used in preference to cannabis itself. Smoking cannabis is associated with significant risks of lung cancer and other respiratory dysfunction. Furthermore, delta9-THC, as a broad-spectrum cannabinoid receptor agonist, will activate both CB1 and CB2 receptors. Synthetic cannabinoids, which target specific cannabinoid receptor subtypes in specific parts of the CNS, are likely to be of more therapeutic use than delta9-THC itself. If rapid absorption is necessary, such synthetic drugs could be delivered via aerosol formulations. [References: 78]

Solca, M. "Acute pain management: unmet needs and new advances in pain management." *European Journal of Anaesthesiology - Supplement.* 25(2002): 3-10 UI 12449672.

Sot, U., et al. "Intrathecal bradykinin administration: opposite effects on nociceptive transmission." *Pharmacology.* 66, no. 2(2002): 76-80 UI 12207114.

Injected intrathecally, bradykinin (BK) produced either hyperalgesia (0.15 microg) or antinociception (6.0 microg) in rats when thermal noxious stimuli were used. Similarly, des-Arg(9)-BK at the lower dose (0.15 microg) decreased, whereas at the higher dose (6.0 microg) it increased the threshold to thermal noxious stimuli; however, these effects were less pronounced than those of BK. The antinociception induced by BK was abolished by HOE 140, a B(2) receptor antagonist, injected intrathecally at a dose of 1.3 ng and was markedly attenuated by des-Arg(10)-HOE 140, a B(1) receptor antagonist (1.15 ng i.t.). The results obtained in this study showed that--depending on the dose used--BK and des-Arg(9)-BK could produce pro- as well as antinociceptive actions. Both B(2) and B(1) receptors are involved in the action of intrathecally applied BK. Copyright 2002 S. Karger AG, Basel

Soyer, J., et al. "The relationship between clinical outcomes and the amount of arthroscopic acromial resection." *Arthroscopy.* 19, no. 1(2003): 34-9 UI 12522400.

PURPOSE: In 47 consecutive patients who had a shoulder impingement syndrome treated by arthroscopic subacromial decompression, we compared the functional outcome with the amount of the acromion resection. TYPE OF STUDY: Prospective study. METHODS: The inclusion criteria for patient selection was a chronic impingement syndrome unresolved by conservative treatment with an intact rotator cuff or with an irreparable rupture of the rotator cuff. The assessment was performed with the scoring system of Constant preoperatively and postoperatively. Quantitative measurements of the acromion resection were made by comparing preoperative and postoperative anteroposterior radiographic views, standardized under fluoroscopic control in order to become reproducible and comparable. There were 39 patients (41 shoulders) available for follow-up at 37 months. RESULTS: The condition of the shoulder, concerning pain, motion and activities, was improved at the time of follow-up, the mean gain of the total functional score was 29 points/100. Age, side, activity, duration of pain before procedure and cuff statement had no influence on preoperative and postoperative Constant's score. The difference between preoperative and postoperative measurements of anterior acromion protuberance was significant. There was no correlation between the amount of the acromion resection and the improvement of Constant's score (P =.84). CONCLUSIONS: The origin of impingement syndrome is multi-factorial, and efficiency of arthroscopic

decompression may not be only due to the amount of acromion resection. From these results and a literature review, this study analyzes several morphologic factors, which could explain the good results of arthroscopic subacromial decompression in impingement syndrome.

St Clair, E. W. "Tides of inflammation: impact of biologics." *Journal of Rheumatology - Supplement.* 65(2002): 22-6 UI 12236618.

Increased knowledge about the mechanisms of joint inflammation and damage has profoundly shaped the development of new therapies for rheumatoid arthritis (RA). The first stop on this remarkable bench-to-bedside journey has been the biologics targeting tumor necrosis factor-alpha (TNF-alpha) and interleukin 1 (IL-1). These engineered adaptations of naturally occurring molecules function to neutralize the biological activity of proinflammatory cytokines overproduced in the joints of patients with RA. The successful translation of this approach into the clinic has had a substantial effect on the care of patients with RA. [References: 12]

Stawowy, M., et al. "Somatosensory changes in the referred pain area following acute inflammation of the appendix." *European Journal of Gastroenterology & Hepatology.* 14, no. 10(2002): 1079-84 UI 12362098.

BACKGROUND AND AIMS: Abdominal pain provoked by acute gastrointestinal disease may increase the sensitivity in the referred somatic pain area. The aim of this study was to examine sensory changes in the referred pain area during acute appendicitis. SUBJECTS: Twenty patients with clinical symptoms of appendicitis were included; 16 of these had appendicitis confirmed at operation. Ten healthy volunteers served as controls. METHODS: In patients with symptoms of appendicitis, somatic sensitivity was assessed using different stimuli presented in the area of referred pain and in a comparable non-painful area at the contralateral site of the abdomen. In healthy control subjects, the same stimuli were presented to McBurney's point and at a similar area on the left abdomen. The rating to pinprick was determined using a Von Frey hair. The rating to thermal stimuli was tested by warm and cold metal rollers. A constant current stimulator was used to measure the sensation and pain-detection threshold to single and repeated electrical stimuli. The pressure pain threshold was determined by an electronic pressure algometer. RESULTS: Patients (n = 16) with verified appendicitis showed increased ratings to pinprick (50%, $P < 0.05$) and thermal stimuli (56%, $P < 0.05$) in the referred pain area. There was a reduction in pain thresholds to single electrical (4.3 v. 8.4 mA, $P = 0.001$), repeated electrical (3.5 v. 4.6 mA, $P = 0.005$) and pressure (89 v. 243 kPa, $P < 0.001$) stimuli in the referred pain area versus the control area. In the control group, no difference was observed between the two areas. The pain thresholds for electrical and pressure stimuli were lower in the referred pain area in patients compared with the same area in controls ($P < 0.001$). CONCLUSION: Somatosensory hyperalgesia to experimental stimuli was observed in acute appendicitis. We believe that viscerosomatic convergence mechanisms and central nervous system hyperexcitability explain these findings.

Sueda, S., et al. "Limitations of medical therapy in patients with pure coronary spastic angina." *Chest.* 123, no. 2(2003): 380-6 UI 12576355.

OBJECTIVES: To assess the efficacy of medication for the treatment of pure coronary spastic angina, 71 consecutive patients with this diagnosis who had undergone coronary arteriography in a hospital with a follow-up of at least 2 years were studied. Methods and results: All 71 patients without significant organic stenosis were treated with long-acting calcium antagonists. The disappearance of chest pain attacks while receiving medical therapy was observed in 27 patients (38%), whereas the remaining 44 patients (62%) had chest pain attacks. Of special interest, 30 patients had more than one attack per month irrespective of the

administration of calcium antagonists or isosorbide dinitrate. Medical treatment showed a good response in female patients (63% vs 31%, respectively; $p < 0.05$) and those with ST-segment elevation during selective spasm provocation tests (63% vs 30%, respectively; $p < 0.05$). In contrast, patients with a longer history of chest pain attacks before hospital admission and those with diffuse spasms (77% vs 34%, respectively; $p < 0.01$) had poor responses to medical treatment. In this study, neither sudden death nor acute myocardial infarction was observed during the follow-up periods. CONCLUSION: The limitations of medical therapy, including the administration of long-acting calcium antagonists, were observed in 30 of 71 patients (42%) with pure coronary spastic angina. Medical treatment was effective in only 38% of patients with pure coronary spastic angina in Japan.

Suter, P. B. "Employment and litigation: improved by work, assisted by verdict." *Pain.* 100, no. 3(2002): 249-57 UI 12467996.

Previous research exploring the relationship between litigation status and the symptoms of the plaintiff has been inconsistent and limited by methodological difficulties. This longitudinal study addressed many of the methodological shortcomings of previous research and examined the relationship between litigation status, employment, depression, pain and disability over the duration of the compensation process. Two hundred chronic back pain participants were selected from patients who attended an initial assessment interview at a pain centre. According to their litigation and employment status these patients were divided into four groups, namely a non-litigating non-working group, a non-litigating working group, a litigating non-working group and a litigating working group. All participants completed three questionnaires, one at intake, one at a minimum of 2 years later (for litigants during the litigation process), with the final questionnaire completed at a minimum of 15 months thereafter (for litigants after they had settled their claim). Questionnaires contained measures of pain (Visual Analogue Scale, Short Form McGill Pain Questionnaire), depression (Zung Self-Rating Depression Scale), and disability (Oswestry Disability Questionnaire). Overall participants who were working scored lower on all the measures than did participants who were not working. On the other hand participants who were litigating scored higher on all the measures than did participants who were not litigating. There was a significant time effect on all measures but this was qualified on some measures by the interactions of time with litigation status and work status. The present research further demonstrated that both litigation and employment were significant factors influencing recovery from injury.

Sutherland, S., and D. C. Matthews. "Emergency management of acute apical periodontitis in the permanent dentition: a systematic review of the literature." *Journal [Computer File]/Canadian Dental Association.* 69, no. 3(2003): 160 UI 12622880.

OBJECTIVE: To perform a systematic literature review and meta-analysis on the effectiveness of interventions used in the emergency management of acute apical periodontitis in the permanent dentition. METHODS: Electronic databases were searched from their inception to 2001. These searches, combined with manual searching, yielded 1,097 citations, of which 92 were relevant. Independent application of inclusion criteria by 2 teams of reviewers yielded 15 eligible randomized controlled trials. Data on population, interventions, outcomes (pain relief or change in intensity of pain as reported by patients or clinicians) and methodological quality were determined by independent duplicate review. Disagreements were resolved by consensus. RESULTS: Meta-analysis showed that pre-emptive analgesics (nonsteroidal anti-inflammatory drugs [NSAIDs]) in conjunction with pulpectomy provided a significant benefit (weighted mean difference -11.70, 95% confidence interval -22.84 to -0.56). Three interventions did

not show significant benefit: systemic antibiotics, intracanal treatment with a steroid-antibiotic combination, and trephination through attached gingiva. CONCLUSIONS: In the management of pain associated with acute apical periodontitis, there is strong evidence to support the use of systemic NSAIDs in conjunction with nonsurgical endodontics. The use of antibiotics is not recommended. [References: 45]

Svensson, C. I., et al. "Systemic and spinal analgesic activity of a delta-opioid-selective lanthionine enkephalin analog." *Journal of Pharmacology & Experimental Therapeutics.* 304, no. 2(2003): 827-32 UI 12538839.

A lanthionine enkephalin derivative, Tyr-c[D-Val(L)-Gly-Phe-D-Ala(L)]-OH (DV(L)(2)DA(L)(5)LanEnk), where Val(L) and Ala(L) denote the lanthionine amino acid ends linked via a monosulfide bridge to form the lanthionine structure, was synthesized. It was found to possess selectivity for and potency at the delta versus mu opioid receptor as defined by binding studies and by its respective activity on the mouse vas deferens compared with the guinea pig ileum. The agent produced a potent analgesia after intrathecal and intraperitoneal delivery with ED(50) values being, respectively, 0.19 mucrog and 0.49 mg/kg. The effects of the agent were reversed by the delta-selective antagonist naltrindole. These analgesic actions occurred at doses that had no effect upon general behavior or motor function. These results suggest a potent delta-preferring agent suitable for development as a systemic delta opioid analgesic.

Takahashi, Y. "Variability and assessment of subjective symptoms in painful neuropathy." *Nippon Rinsho - Japanese Journal of Clinical Medicine.* 60, no. Suppl 10(2002): 235-9 UI 12430234.

Takenaka-Hamaya, C., Y. Hamaya, and S. Dohi. "Epidural morphine injection after combined spinal and epidural anaesthesia." *European Journal of Anaesthesiology.* 19, no. 9(2002): 672-6 UI 12243291.

BACKGROUND AND OBJECTIVE: Although combined spinal and epidural anaesthesia is efficient and easy to perform, the technique can be a double-edged sword having the potential risk that an increased flux of drugs across the meninges through the hole made in it may lead to severe adverse effects. The aim was to compare the incidence of adverse events when an epidural injection of morphine was given after combined spinal and epidural anaesthesia or after epidural anaesthesia. METHODS: Fifteen patients had an epidural catheter inserted at the L2-3 interspace, and then a spinal block administered via the L3-4 interspace. Another 15 patients only had an epidural catheter inserted. After the onset of spinal or epidural anaesthesia had been confirmed, morphine 2 mg was injected into the epidural space, and a continuous epidural infusion of morphine was started. At the end of the operation and at 4, 8 and 12 h after the administration of epidural morphine and on the next day, the following variables were examined: blood pressure, heart rate, respiratory rate, arterial blood-gas analysis, visual analogue scale pain scores, nausea/vomiting scores, and pruritus scores. RESULTS: In the study population, the epidural injection of morphine was not associated with a significantly higher incidence of adverse events when given after spinal anaesthesia than after epidural anaesthesia. CONCLUSIONS: The adverse effects associated with epidural morphine given after spinal anaesthesia did not increase significantly when a 27-G Whitacre needle was used. Thus, the morphine flux through the meningeal hole into the cerebrospinal fluid was trivial.

Tashiro, S., et al. "Gout tophus in the bipartite patella." *Orthopedics.* 25, no. 11(2002): 1295-6 UI 12452351.

Tfelt-Hansen, P., K. McCarroll, and C. Lines. "Sum of Pain Intensity Differences (SPID) in migraine trials. A comment based on four rizatriptan trials." *Cephalalgia.* 22, no. 8(2002): 664-6 UI 12383062.

Sum of Pain Intensity Difference (SPID) is an outcome measure that summarizes treatment response over a clinically relevant period. SPID is widely reported in clinical trials of analgesics but has been little used in migraine trials. We compared SPID over 2 h with the standard migraine outcome measures of pain-free at 2 h and headache relief at 2 h using data from four published clinical trials of rizatriptan in migraine patients. In assessing treatment response (rizatriptan and sumatriptan versus placebo, rizatriptan versus sumatriptan, within-treatment dose effects), SPID usually yielded similar results to the more easily understood pain-free measure.

Theroux, P. "Unstable angina and non-Q-wave myocardial infarction. Treatment beyond aspirin and heparin." *Cardiologia.* 44 Suppl 1, no. Pt 2(1999): 799 UI 12497824.

Thomas, S. H., et al. "Effects of morphine analgesia on diagnostic accuracy in Emergency Department patients with abdominal pain: a prospective, randomized trial." *Journal of the American College of Surgeons.* 196, no. 1(2003): 18-31 UI 12517545.

BACKGROUND: Because of concerns about masking important physical findings, there is controversy surrounding whether it is safe to provide analgesia to patients with undifferentiated abdominal pain. The purpose of this study was to address the effects of analgesia on the physical examination and diagnostic accuracy for patients with abdominal pain. STUDY DESIGN: The study was a prospective, double-blind clinical trial in which adult Emergency Department (ED) patients with undifferentiated abdominal pain were randomized to receive placebo (control group, n = 36) or morphine sulphate (MS group, n = 38). Diagnostic and physical examination assessments were recorded before and after a 60-minute period during which study medication was titrated. Diagnostic accuracy and physical examination changes were compared between groups using univariate statistical analyses. RESULTS: There were no differences between control and MS groups with respect to changes in physical or diagnostic accuracy. The overall likelihood of change in severity of tenderness was similar in MS (37.7%) as compared with control (35.3%) patients (risk ratio [RR] 1.07, 95% confidence interval [CI] 0.64-1.78). MS patients were no more likely than controls to have a change in pain location (34.0% versus 41.2%, RR 0.82, 95% CI 0.50-1.36). Diagnostic accuracy did not differ between MS and control groups (64.2% versus 66.7%, RR 0.96, 95% CI 0.73-1.27). There were no differences between groups with respect to likelihood of any change occurring in the diagnostic list (37.7% versus 31.4%, RR 1.20, 95% CI 0.71-2.05). Correlation with clinical course and final diagnosis revealed no instance of masking of physical examination findings. CONCLUSIONS: Results of this study support a practice of early provision of analgesia to patients with undifferentiated abdominal pain.

Thompson, A. R., and J. B. Ray. "The importance of opioid tolerance: a therapeutic paradox." *Journal of the American College of Surgeons.* 196, no. 2(2003): 321-4 UI 12595060.

Thornhill, T. S. "Painful total knee arthroplasty." *Orthopedics.* 25, no. 9(2002): 965-7 UI 12269431.

Tong, D., et al. "Prospective study on incidence and functional impact of transient neurologic symptoms associated with 1% versus 5% hyperbaric lidocaine in short urologic procedures." *Anesthesiology.* 98, no. 2(2003): 485-94 UI 12552209.

BACKGROUND: The objectives of this study were to compare the incidence, onset, duration and pain scores of transient neurologic symptoms (TNS) with 1% versus 5% hyperbaric lidocaine in spinal anesthesia for short urological procedures in a large prospective study. This study would also evaluate patient satisfaction, and impact of TNS on functional recovery to assess the clinical significance of TNS. METHODS: This was a multicenter, double-blind, randomized controlled trial. Four hundred fifty-three patients undergoing short transurethral procedures were randomized to receive 1% or 5% hyperbaric lidocaine. Eighty milligrams of 1% or 5% hyperbaric lidocaine was administered. During the first 3 days after surgery, the presence of TNS, its intensity and duration, and patient functional level were recorded. An intention-to-treat analysis was used. RESULTS: There was no difference in the incidence of TNS (21% vs. 18%) between 1% versus 5% lidocaine. Patients with TNS had significantly higher pain scores (5.3 +/- 3 vs. 2.3 +/- 3) than patients without TNS during the first 24 h. This difference in pain scores persisted until 72 h postoperatively. There was a significant difference in the daily activities functional scores (2.2 +/- 1 vs. 1.4 +/- 0.8) of TNS non-TNS patients during the first 24 h postoperatively. CONCLUSIONS: There was no difference in the incidence of TNS between the 1% versus 5% spinal lidocaine groups. Pain scores were higher in patients with TNS than those who did not have TNS. During the first 48 h postop, a small proportion of patients who had TNS experienced functional impairment of walking, sitting, and sleeping.

Tumia, N., et al. "Aberdeen Colles' fracture brace as a treatment for Colles' fracture. A multicentre, prospective, randomised, controlled trial." *Journal of Bone & Joint Surgery - British Volume.* 85, no. 1(2003): 78-82 UI 12585582.

We carried out a randomised, prospective, multicentre clinical trial of the treatment of Colles' fractures. A total of 339 patients was placed into two groups, those with minimally displaced fractures not requiring manipulation (151 patients) and those with displaced fractures which needed manipulation (188 patients). Treatment was by either a conventional Colles' plaster cast (a control group) or with a prefabricated functional brace (the Aberdeen Colles' fracture brace). Similar results were obtained in both groups with regard to the reduction and to pain scores but the brace provided better grip strength in the early stages of treatment. This was statistically significant after five weeks for both manipulated and non-manipulated fractures. At the tenth day the results were statistically significant only in manipulated fractures. There was no significant difference in the functional outcome between the two treatment groups. However, younger patients and those with less initial displacement had better functional results.

Turk, D. C., E. S. Monarch, and A. D. Williams. "Cancer patients in pain: considerations for assessing the whole person." *Hematology - Oncology Clinics of North America.* 16, no. 3(2002): 511-25 UI 12170565.

Pain is a subjective perception that is influenced by psychosocial and behavioral factors and physical pathology. In cancer, the source of the pain may be the disease itself, the treatment, or co-occurring pain syndromes. Often, cancer is a progressive disease, and pain may be marked by exacerbations, additional treatment, and remissions. Thus, pain assessment must become part of routine care. Ratings of pain should be performed on a regular basis, just as vital signs are taken on a regular basis. Unlike the other vital signs, however, pain can only be assessed by the patients' verbal and nonverbal behavior. Therefore, it is necessary to actively involve the patient in the assessment process. In deciding what to assess about the pain and how, the clinician needs to balance the purposes of the evaluation with the patient's capacity. During initial assessment it may be possible to include a more comprehensive evaluation of the patient and his or her pain. Relatively brief measures may be used on a routine ongoing basis. When a new type of pain or

exacerbation of pain is identified, additional attention beyond pain severity and location may be appropriate. For the very ill patient, it may be possible only to ask a few questions and to observe his or her behavior. In some circumstances, such as when patients are unwilling or unable to report on their pain, it is useful to gather information from caretakers. At a minimum, the severity, location, and pattern of pain and patients' functional activity and mood should be assessed. Timely, appropriate, and thorough assessment and treatment of cancer patients experiencing pain should reduce their suffering and improve the quality of their lives. [References: 43]

Vielhaber, A., and R. K. Portenoy. "Advances in cancer pain management." *Hematology - Oncology Clinics of North America.* 16, no. 3(2002): 527-41 UI 12170566.

Although most patients with cancer pain can attain a favorable balance between analgesia and side effects with a conventional approach to opioid therapy, a substantial minority cannot. For these patients, an important subgroup of whom have neuropathic pain, alternative therapeutic strategies are needed. With a detailed assessment, clinicians should be able to choose among the large and diverse group of options available and implement an approach, or combination of approaches, that have a high probability of improving analgesic outcomes. [References: 92]

Walker, K., et al. "Disease modifying and anti-nociceptive effects of the bisphosphonate, zoledronic acid in a model of bone cancer pain." *Pain.* 100, no. 3(2002): 219-29 UI 12467993.

Inoculation of syngeneic MRMT-1 mammary tumour cells into one tibia of female rats produced tumour growth within the bone associated with a reduction in bone mineral density (BMD) and bone mineral content (BMC), severe radiological signs of bone destruction, together with the development of behavioural mechanical allodynia and hyperalgesia. Histological and radiological examination showed that chronic treatment with the bisphosphonate, zoledronic acid (30 microg/kg, s.c.), for 19 days significantly inhibited tumour proliferation and preserved the cortical and trabecular bone structure. In addition, BMD and BMC were preserved and a dramatic reduction of tartrate resistant acid phosphatase-positive polykaryocytes (osteoclasts) was observed. In behavioural tests, chronic treatment with zoledronic acid but not the significantly less effective bisphosphonate, pamidronate, or the selective COX-2 inhibitor, celebrex, attenuated mechanical allodynia and hyperalgesia in the affected hind paw. Zoledronic acid also attenuated mechanical hyperalgesia associated with chronic peripheral neuropathy and inflammation in the rat. In contrast, pamidronate or clodronate did not have any anti-hyperalgesic effect on mechanical hyperalgesia in the neuropathic and inflammatory pain models. We conclude that zoledronic acid, in addition to, or independent from, its anti-metastatic and bone preserving therapeutic effects, is an anti-nociceptive agent in a rat model of metastatic cancer pain. This unique property of zoledronic acid amongst the bisphosphonate class of compounds could make this drug a preferred choice for the treatment of painful bone metastases in the clinic.

Wang, W. T., et al. "Effectiveness of physical therapy for patients with neck pain: an individualized approach using a clinical decision-making algorithm." *American Journal of Physical Medicine & Rehabilitation.* 82, no. 3(2003): 203-18; quiz 219-21 UI 12595773.

OBJECTIVE: The purpose of this study was to determine the effectiveness of an individualized physical therapy intervention in treating neck pain based on a clinical reasoning algorithm. Treatment effectiveness was examined by assessing changes in impairment, physical performance, and disability in response to intervention. DESIGN: One treatment group of 30 patients with neck pain completed physical

therapy treatment. The control group of convenience was formed by a cohort group of 27 subjects who also had neck pain but did not receive treatment for various reasons. There were no significant differences between groups in demographic data and the initial test scores of the outcome measures. A quasi-experimental, nonequivalent, pretest-posttest control group design was used. A physical therapist rendered an eclectic intervention to the treatment group based on a clinical decision-making algorithm. Treatment outcome measures included the following five dependent variables: cervical range of motion, numeric pain rating, timed weighted overhead endurance, the supine capital flexion endurance test, and the Patient Specific Functional Scale. Both the treatment and control groups completed the initial and follow-up examinations, with an average duration of 4 wk between tests. RESULTS: Five mixed analyses of variance with follow-up tests showed a significant difference for all outcome measures in the treatment group compared with the control group. After an average 4 wk of physical therapy intervention, patients in the treatment group demonstrated statistically significant increases of cervical range of motion, decrease of pain, increases of physical performance measures, and decreases in the level of disability. The control group showed no differences in all five outcome variables between the initial and follow-up test scores. CONCLUSIONS: This study delineated algorithm-based clinical reasoning strategies for evaluating and treating patients with cervical pain. The algorithm can help clinicians classify patients with cervical pain into clinical patterns and provides pattern-specific guidelines for physical therapy interventions. An organized and specific physical therapy program was effective in improving the status of patients with neck pain.

Weber, A., et al. "Sciatic nerve block and the improvement of femoral nerve block analgesia after total knee replacement." *European Journal of Anaesthesiology.* 19, no. 11(2002): 834-6 UI 12442936.

Weinbroum, A. A. "A single small dose of postoperative ketamine provides rapid and sustained improvement in morphine analgesia in the presence of morphine-resistant pain." *Anesthesia & Analgesia.* 96, no. 3(2003): 789-95, table of contents UI 12598264.

It is a common clinical observation that postoperative pain may be resistant to morphine. The analgesic potentials of ketamine have also been well documented. In this study, we evaluated the effects of postoperative coadministration of small doses of ketamine and morphine on pain intensity, SpO(2), and subjectively rated variables in surgical patients who underwent standardized general anesthesia and complained of pain (> or =6 of 10 on a visual analog scale [VAS]) despite >0.1 mg/kg of i.v. morphine administration within 30 min. Patients randomly received up to three boluses of 30 microg/kg of morphine plus saline (MS; n = 114) or 15 microg/kg of morphine plus 250 microg/kg of ketamine (MK; n = 131) within 10 min in a double-blinded manner. The MS group's pain VAS scores were 5.5 +/- 1.18 and 3.8 +/- 0.9 after 10 and 120 min, respectively, after 2.52 +/- 0.56 injections, versus the MK group's VAS scores of 2.94 +/- 1.28 and 1.47 +/- 0.65, respectively ($P < 0.001$), after 1.35 +/- 0.56 injections ($P < 0.001$). The 10-min level of wakefulness (1-10 VAS) in the MS group was significantly ($P < 0.001$) less (6.1 +/- 1.5) than the MK group's (8.37 +/- 1.19). SpO(2) decreased by 0.26% in the MS group but increased by 1.71% in the MK patients at the 10-min time point ($P < 0.001$). Thirty MS versus nine MK patients ($P < 0.001$) experienced nausea/vomiting; nine MK patients sustained a 2-min light-headed sensation, and one patient had a weird dream after the second drug injection. IMPLICATIONS: A small-dose ketamine and morphine regimen interrupted severe postoperative pain that was not relieved previously by morphine. Ketamine reduced morphine consumption and provided rapid and sustained improvement in morphine analgesia and in subjective feelings of well-being, without unacceptable side effects.

Wentz, J. D. "Understanding neuropathic pain." *Nursing.* 33, no. 1(2003): 22 UI 12555754.

Wilson, S. G., et al. "The heritability of antinociception: common pharmacogenetic mediation of five neurochemically distinct analgesics." *Journal of Pharmacology & Experimental Therapeutics.* 304, no. 2(2003): 547-59 UI 12538806.

The heritability of nociception and antinociception has been well established in the mouse. The pharmacogenetics of morphine analgesia are fairly well characterized, but far less is known about other analgesics. The purpose of this work was to begin the systematic genetic study of non-mu-opioid analgesics. We tested mice of 12 inbred mouse strains for baseline nociceptive sensitivity (49 degrees C tail-withdrawal assay) and subsequent antinociceptive sensitivity to systemic administration of (trans)-3,4-dichloro-N-methyl-N-[2-(1-pyrrolidinyl)-cyclohexyl]benzeneacetamide methane-sulfonate hydrate (U50,488; 10-150 mg/kg), a kappa-opioid receptor agonist; (R)-(+)-[2,3-dihydro-5-methyl-3-(4-morpholinylmethyl)pyrroloand 2 over black square]; [1 and 2 over black square],2,3-de]-1,4-benzoxazin-6-yl]-1-naphthalenylmethanone (WIN55,212-2; 0.5-480 mg/kg), a synthetic cannabinoid receptor agonist; epibatidine (7.5-150 microg/kg), a nicotinic receptor agonist; clonidine (0.1-5 mg/kg), an alpha(2)-adrenergic receptor agonist; and, for purposes of comparison, the prototypic mu-opioid receptor agonist, morphine (5-200 mg/kg). Robust interstrain variability was observed in nociceptive sensitivity and in the antinociceptive effects of each of the drugs, with extreme-responding strains exhibiting antinociceptive potencies differing up to 37-fold. Unexpectedly, we observed moderate-to-high genetic correlations of strain sensitivities to the five drugs (r = 0.39-0.77). We also found moderate-to-high correlations between baseline nociceptive sensitivity and subsequent analgesic response to each drug (r = 0.33-0.68). The generalizability of these findings was established in follow-up experiments investigating morphine and clonidine inhibition of formalin test nociception. Despite the fact that each drug activates a unique receptor, our results suggest that the potency of each drug is affected by a common set of genes. However, the genes in question may affect antinociception indirectly, via a primary action on baseline nociceptive sensitivity.

Yamamoto, T., et al. "Off-pump coronary artery bypass grafting in a patient with liver cirrhosis." *Japanese Journal of Thoracic & Cardiovascular Surgery.* 50, no. 12(2002): 526-9 UI 12561096.

We report a case of unstable angina pectoris and alcohol-related Child-Pugh class B cirrhosis. The patient was a 60-year-old man who was admitted to hospital with chest pain. He had previously been diagnosed to have Child B cirrhosis due to alcoholic liver dysfunction at 58 years of age. He also had experienced ruptured esophageal varices, moderate ascites, and hyperammonemia. We performed percutaneous catheter intervention; however, he developed re-stenosis in the right coronary artery, and progression in the disease in other coronary arteries. We then performed coronary artery bypass grafting on the beating heart without cardiopulmonary bypass. He was discharged on the 13th postoperative day without any complications. This case demonstrated that off-pump coronary artery bypass grafting was safe for such a patient.

Yamashita, S., et al. "Lidocaine toxicity during frequent viscous lidocaine use for painful tongue ulcer." *Journal of Pain & Symptom Management.* 24, no. 5(2002): 543-5 UI 12547053.

Oral viscous lidocaine is useful for the treatment of symptoms induced by oral inflamed mucosa, such as radiation- or chemotherapy-induced mucositis. The toxic reactions associated with an accidental overdose have been reported in pediatric

cases. We report a case of lidocaine toxicity in a 22-year-old man during frequent viscous lidocaine use for severe painful tongue ulcer. The toxic symptoms developed when the amount of oral viscous lidocaine exceeded 240 ml per day. The serum lidocaine concentration associated with this use was 6.7 microg/ml. The toxic symptoms continued in spite of the serum lidocaine concentration below the toxic level after the start of a diluted preparation, which contained a half-dose lidocaine. It is speculated that lidocaine metabolites might have contributed to the toxic symptoms. Clinicians should consider the risk of lidocaine toxicity in cases of frequent viscous lidocaine use, and determine the serum concentrations of lidocaine and its metabolites.

Yoburn, B. C., et al. "Role of G(i)alpha2-protein in opioid tolerance and mu-opioid receptor downregulation in vivo." *Synapse.* 47, no. 2(2003): 109-16 UI 12454948.

Although opioid receptors are G-protein coupled, the role that specific G-protein subunits play in the development of opioid tolerance and the regulation of opioid receptor number is not well understood. In the present study, we used a G((i)alpha2) antisense oligodeoxynucleotide (ODN) to examine the contribution of G((i)alpha2) proteins to mu-opioid tolerance and receptor downregulation in the mouse. Mice were injected intracerebroventricularly (ICV) and into the spinal intrathecal space (IT) for 4-5 consecutive days (30 microg/site/day), with an antisense ODN or a mismatch ODN directed at mRNA for the G((i)alpha2) subunit of G-proteins. Controls were treated with dH(2)O. On the second day of ODN treatment continuous subcutaneous (SC) infusion of etorphine (200 microg/kg/day) or morphine (40 mg/kg/day + 25 mg pellet) was begun. Control mice were implanted with inert placebo pellets. Three days later, pumps and pellets were removed and mice were tested for morphine analgesia or mu-opioid receptor density was determined in whole brain. Etorphine produced significant tolerance (ED(50) shift = approximately 11-fold) and downregulation of mu-opioid receptors (approximately 25%). Morphine treatment produced significant tolerance (ED(50) shift approximately 9-fold), but no mu-opioid receptor downregulation. Antisense treatment reduced G((i)alpha2) protein levels in striatum and spinal cord by approximately 25%. G((i)alpha2) antisense reduced the acute potency of morphine. G((i)alpha2) antisense blocked the development of tolerance to morphine treatment and reduced the development of tolerance to etorphine treatment. Antisense did not have any effect on etorphine-induced mu-opioid receptor downregulation. In another experiment, 7-day treatment with morphine or etorphine similarly increased G((i)alpha2) mRNA and protein abundance in spinal cord. Overall, these results support an important role for G((i)alpha2)-protein in the acute effects of opioids and opioid tolerance. However, G((i)alpha2) is not required for agonist-induced mu-opioid receptor density regulation in vivo. Copyright 2002 Wiley-Liss, Inc.

Yokoyama, M., et al. "Total spinal anesthesia provides transient relief of intractable pain." *Canadian Journal of Anaesthesia.* 49, no. 8(2002): 810-3 UI 12374709.

PURPOSE: Intentional total spinal anesthesia (TSA) has been used for intractable pain treatment. However, the long-term effect of pain-relief is controversial. We investigate the short- and long-term effects of pain-relief by TSA. METHODS: Twelve patients with intractable pain participated in a crossover study. All participants received two different treatments in random order at a 30-day interval: i.v. infusion with 300 mg of lidocaine (i.v.-Lido), and TSA with 20 mL of 1.5% lidocaine (TSA-Lido). Pain level at rest was scored with the visual analogue scale (VAS: 0-100), and blood pressure and heart rate were measured before and at two hours, 24 hr, seven days, and 30 days after treatment. Plasma lidocaine concentrations were measured at 0.5, one, and two hours. RESULTS: Heart rate and mean arterial pressure during or after TSA-Lido were similar to those before TSA-Lido. Plasma lidocaine

concentrations were similar between the two treatments. No significant difference in any value occurred in the i.v.-Lido treatment. VAS were similar before both treatments (87 +/- 6 for TSA-Lido; 86 +/- 7 for i.v.-Lido). After TSA-Lido, VAS decreased significantly until day seven (two hours, 17 +/- 22, P < 0.01; 24 hr, 43 +/- 20, P < 0.01; seven days, 66 +/- 16, P < 0.01). However, VAS returned to the pre-block values 30 days after TSA-Lido. CONCLUSION: Intractable pain was decreased significantly for several days after TSA, but pain-relief was not sustained.

Yusuf, S., et al. "Early and late effects of clopidogrel in patients with acute coronary syndromes.[comment]." *Circulation.* 107, no. 7(2003): 966-72 UI 12600908.

BACKGROUND: The risk of ischemic events is high, both early and late after acute coronary syndromes (ACS). We examine the benefits and risks associated with the use of adding clopidogrel to aspirin within the first 30 days and later (31 days to 12 months) in 12 562 patients with ACS. METHODS AND RESULTS: A total of 12 562 ACS patients were randomized to receive clopidogrel (300 mg initially followed by 75 mg/d) or placebo for 3 to 12 months. The proportion of patients experiencing cardiovascular death, myocardial infarction, or strokes (primary outcome) at 30 days was 5.4% in the placebo group and 4.3% in the active group (relative risk 0.79, 95% CI 0.67 to 0.92). Beyond 30 days, the corresponding rates were 6.3% versus 5.2% (relative risk 0.82, 95% CI 0.70 to 0.95). There was no significant excess in life-threatening bleeds in each period (0.97% versus 1.28%, relative risk 1.32, 95% CI 0.95 to 1.84 for 0 to 30 days; 0.83% versus 0.91%, relative risk 1.09, 95% CI 0.75 to 1.59 for 31 days to 12 months). Further subdivision of the early data indicates benefits within 24 hours with consistently lower rates of the primary outcome in combination with refractory or severe ischemia. CONCLUSIONS: Clopidogrel reduces the risk of ischemic vascular events, with the benefits emerging within 24 hours of initiation of treatment and continuing throughout the 12 months (mean 9 months) of the study.

Yvanes-Thomas, M., et al. "Validity of the French-language version of the Quebec back pain disability scale in low back pain patients in France." *Joint, Bone, Spine: Revue du Rhumatisme.* 69, no. 4(2002): 397-405 UI 12184438.

OBJECTIVES: The primary objectives were to evaluate the acceptability in France of the Quebec Back Pain Disability Scale (QBPDS) in its original French-language version and to study its correlational validity against indicators of impairment, pain, disability, psychological status, and perceived health status. MATERIAL AND METHODS: Thirty-two patients with chronic low back pain were recruited at the rheumatology outpatient clinic of a French hospital. A physical examination was performed for determination of an impairment score, and scales were completed for pain (visual analog scale and Saint-Antoine Questionnaire), disability (QBPDS and Dallas Scale [DS]), perceived health status (Nottingham Health Profile, NHP), and psychological status (Hospital Anxiety and Depression Scale, HADS). RESULTS: Acceptability, internal consistency, and content validity of the QBPDS were satisfactory. Investigation of correlational validity showed good agreement with the DPQ (r = 0.755) and NHP (r = 0.739) and fair agreement with the impairment score (r = 0.449), the VAS pain score (r = 0.448), and the HADS score (r = 0.473). The QBPDS showed good discriminating power. Validity of the QBPDS was confirmed. DISCUSSION: Our results confirm the good measurement properties of the original French-language version of the QBPDS in French hospital-clinic patients with chronic low back pain. Comparison of the QBPDS and DPQ in this study shows that the QBPDS is better for evaluating disability, whereas the DPQ evaluates the overall, functional, psychological, and social impact of low back pain.

Zimmermann, P. G. "Triaging lower abdominal pain." *Rn.* 65, no. 12(2002): 52-7; quiz 58 UI 12567831.

Zinn, C. "Doctors told to use positive language in managing pain." *Bmj.* 326, no. 7384(2003): 301 UI 12574030.